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DIVISION OF SYNTHETIC CHEMISTRY

— Organoelement Chemistry —

- Nakanishi W, Nakamoto T, Hayashi S, Sasamori T, Tokitoh N: Atoms-in-Molecules Analysis of Extended Hypervalent 5c6e C₂Z₂O Interactions at the 1,8,9-Positions of Anthraquinone and 9-Methoxyanthracene Systems, *Chem. Eur. J.*, **13**, 255-268 (2007).
- Hamaki H, Takeda N, Yamasaki T, Sasamori T, Tokitoh N: Synthesis and Properties of Alkaline Metal Complexes with New Overcrowded β -Diketiminato Ligands, *J. Organomet. Chem.*, **692**, 44-54 (2007).
- Sasamori T, Kobayashi M, Nagahora N, Sugiyama Y, Tokitoh N: Synthesis and Characterization of Functionalized Ferrocenylsilanes Bearing a Bulky Substituent, *Silicon Chem.*, **3**, 199-207 (2005).
- Hamaki H, Takeda N, Tokitoh N: Nucleophilic Attack toward Group 4 Metal Complexes Bearing Reactive 1-Aza-1,3-butadienyl and Imido Moieties, *Inorg. Chem.*, **46**, 1795-1802 (2007).
- Tokitoh N, Nakata N, Shinohara A, Takeda N, Sasamori T: Coordination Chemistry of a Kinetically Stabilized Germabenzene: Syntheses and Properties of Stable η^6 -Germabenzene Complexes Coordinated with Transition Metals, *Chem. Eur. J.*, **13**, 1856-1862 (2007).
- Tsubaki K, Tanima D, Sasamori T, Tokitoh N, Kawabata T: Colorimetric Recognition of the Length of α,ω -Diamines in Water, *Tetrahedron Lett.*, **48**, 2135-2138 (2007).
- Tanabe T, Takeda N, Tokitoh N: First Structural Characterization of Silanedithiol and Its Application toward the Synthesis of Silanedithiolato Complexes, *Eur. J. Inorg. Chem.*, 1225-1228 (2007).
- Sasamori T, Ozaki S, Tokitoh N: Unexpected Reaction of an Overcrowded 9,10-Dihydroanthrylchlorosilane Leading to the Formation of a Dibenzo-7-silanorbornadiene Derivative, *Chem. Lett.*, **36**, 588-589 (2007).
- Shimizu D, Takeda N, Tokitoh N: Synthesis of Mono- and Trinuclear Palladium(II) Complexes via Oxidative Addition of a Bulky Hexathioether Containing a Disulfide Bond to Palladium(0), *J. Organomet. Chem.*, **692**, 2716-2728 (2007).
- Matano Y, Matsumoto K, Terasaka Y, Hotta H, Araki Y, Ito O, Shiro M, Sasamori T, Tokitoh N, Imahori H: Synthesis, Structures, and Properties of Meso-Phosphorylporphyrins: Self-organization through P-oxo-to-Zinc Coordination, *Chem. Eur. J.*, **13**, 891-901 (2007).
- Tajima T, Sasamori T, Takeda N, Tokitoh N: Synthesis and Structure of a Kinetically Stabilized Stannanethione, *Bull. Chem. Soc. Jpn.*, **80**, 1202-1204 (2007).
- Takeda N, Isobe T, Tokitoh N: Synthesis of an Acyclic Diselenodithioether Its Application to the Synthesis of a Distorted Ligand Tethered with Bulky Substituents and Octahedral Palladium(II) Complex, *Heteroatom Chem.*, **18**, 549-556 (2007).
- Sasamori T, Matsumoto T, Takeda N, Tokitoh N: Synthesis and Properties of a Rhodium Complex Having a Novel β -Ketophosphinato Ligand, a Heavier Congener of a β -Ketoiminato Ligand, *Organometallics*, **26**, 3621-3623 (2007).
- Katoh K, Sasamori T, Tokitoh N, Sato N: Synthesis of a Donor Molecule with Metal Coordination Sites toward Multifunctional Complexes, *Chem. Lett.*, **36**, 1122-1123 (2007).
- Tokitoh N, Shinohara A, Matsumoto T, Sasamori T, Takeda N, Furukawa Y: Synthesis and Properties of a Kinetically Stabilized 9-Silaphenanthrene, *Organometallics*, **26**, 4048-4053 (2007).
- Takeda N, Isobe T, Sasamori T, Tokitoh N: [1,2-Bis(phenylseleno)benzene] dichloridopalladium(II), *Acta Cryst. E*, **63**, M2546 (2007).
- Takeda N, Tokitoh N: A Bulky Silylene Generated under Mild Conditions: Its Application to the Synthesis of Organosilicon Compounds, *Synlett*, 2483-2491 (2007).
- Nagahora N, Sasamori T, Watanabe Y, Furukawa Y, Tokitoh N: Kinetically Stabilized 1,1'-Bis[(E)-diphosphenyl]ferrocenes: Syntheses, Structures, Properties, and Reactivity, *Bull. Chem. Soc. Jpn.*, **80**, 1184-1900 (2007).
- Sasamori T, Mieda E, Tokitoh N: Chalcogenation Reactions of Overcrowded Doubly Bonded Systems between Heavier Group 15 Elements, *Bull. Chem. Soc. Jpn.*, **80**, 2425-2435 (2007).
- Nagahora N, Yuasa A, Sasamori T, Tokitoh N: *trans*-1,2-Diferrocenyl-1,2-difluoroethene, *Acta Cryst. E*, **63**, m2702 (2007).
- Matsuda T, Kitazume T, Harada T, Nakamura K: Biocatalysis in Supercritical Carbon Dioxide, *Bioindustry*, **24**, 24-31 (2007) (in Japanese).
- Kawabe S, Matsuo K, Tokuda Y, Nakamura K: Effect of Light Emitting Diode (LED) Irradiation on *Perilla frutescens* var. *crispa*, *The Bulletin of Kurashiki University of Science and the Arts*, **12**, 69-76 (2007).
- Nakamura K, Matsuda T: Biocatalysis in Water, *Organic Reactions in Water—Principles, Strategies and Methods*, 301-349 (2007).
- Nakamura K, Fujii M, Ida Y: Synthesis of Both Enantiomers of 1-Phenylethanol by Reduction of Acetophenone with *Geotrichum Candidum* IFO 5767, *Catalysts for Fine Chemical Synthesis Volume 5: Regio- and Stereo-Controlled Oxidations and Reductions*, 93-97 (2007).
- Nakamura K: Future Directions in Photosynthetic Organisms-catalyzed Reactions, *Future Directions in Biocatalysis*, 51-58 (2007).

Fujii M, Akita H, Ida Y, Nakagawa T, Nakamura K: Control of Chemoselectivity of Microbial Reaction with Resin Adsorbent: Enhancement of Baeyer-Villiger Oxidation over Reduction, *Appl. Microb. Biotech.*, **77**, 45-51 (2007).

— Structural Organic Chemistry —

Sartori E, Ruzzi M, Turro N J, Decatur J D, Doetschman D C, Lawler R G, Buchachenko A L, Murata Y, Komatsu K: Nuclear Relaxation of H₂ and H₂@C₆₀ in Organic Solvents, *J. Am. Chem. Soc.*, **128**, 14752-14753 (2006).

Chuang S C, Murata Y, Murata M, Mori S, Maeda S, Tanabe F, Komatsu K: Fine Tuning of the Orifice Size of an Open-Cage Fullerene by Placing Selenium in the Rim: Insertion/Release of Molecular Hydrogen, *Chem. Commun.*, 1278-1280 (2007).

Watanabe K, Komatsu M, Niidome Y, Murata M, Murata Y, Komatsu K, Nakashima N: Electrochemistry of an Open-Cage Fullerene Embedded in a Film of Hydrophobic Ammonium Ion on an Electrode, *J. Phys. Chem.*, **111**, 6500-6504 (2007).

Yoshimoto S, Tsutsumi E, Narita R, Murata Y, Murata M, Fujiwara K, Komatsu K, Ito O, Itaya K: Epitaxial Supramolecular Assembly of Fullerenes Formed by Using a Coronene Template on a Au(111) Surface in Solution, *J. Am. Chem. Soc.*, **129**, 4366-4376 (2007).

Chuang S C, Murata Y, Murata M, Komatsu K: The Outside Knows the Difference Inside: Trapping Helium by Immediate Reduction of Orifice Size of an Open-Cage Fullerene and the Effect of Encapsulated Helium and Hydrogen upon the NMR of Proton Directly Attached to the Outside, *Chem. Commun.*, 1751-1753 (2007).

Chuang S C, Murata Y, Murata M, Komatsu K: An Orifice-Size Index for Open-Cage Fullerenes, *J. Org. Chem.*, **72**, 6447-6453 (2007).

Roubelakis M M, Murata Y, Komatsu K, Orfanopoulos M: Efficient Synthesis of Open-Cage Fullerene Derivative Having 16-Membered-Ring Orifices, *J. Org. Chem.*, **72**, 7042-7045 (2007).

Lopez-Gejo J, Marti A A, Ruzzi M, Jockusch S, Komatsu K, Tanabe F, Murata Y, Turro N J: Can H₂ inside C₆₀ Communicate with the Outside World?, *J. Am. Chem. Soc.*, **129**, 14554-14555 (2007).

[Others]

Komatsu K, Murata Y: Synthesis of Endohedral Fullerenes by Molecular Surgery, *Electrochemistry*, **75**, 824-829 (2007) (in Japanese).

Komatsu K, Murata M: Synthesis and Properties of Endohedral Fullerene Encapsulating Molecular Hydrogen, *Handbook of Nano Carbon*, 594-598 (2007) (in Japanese).

— Synthetic Organic Chemistry —

Kawabata T, Muramatsu W, Nishio T, Shibata T, Schedel H: A Catalytic One-Step Process for the Chemo- and Regioselective Acylation of Monosaccharides, *J. Am. Chem. Soc.*, **129**, 12890-12895 (2007).

Muramatsu W, Kawabata T: Regioselective Acylation of 6-O-Protected Octyl β -D-Glucopyranosides by DMAP Catalysis, *Tetrahedron Lett.*, **48**, 5031-5033 (2007).

Tsubaki K, Takaishi K, Sue D, Kawabata T: Synthesis and Determination of the Absolute Configuration of Chiral Tetracosanaphthalenes, *J. Org. Chem.*, **72**, 4238-4241 (2007).

Tsubaki K, Tanimura D, Sasamori T, Tokitoh N, Kawabata T: Colorimetric Recognition of Length of α,ω -Diamines in Water, *Tetrahedron Lett.*, **48**, 2135-2138 (2007).

Tsubaki K: Synthesis and Properties of the Chiral Oligonaphthalenes, *Org. Biomol. Chem.*, **5**, 2179-2188 (2007).

Tsubaki K, Dinh T T H, Valluru R K, Ohnishi H, Fuji K, Kawabata T: Synthesis of Chiral 2,2'-dimethyl-1,1'-binaphthyl-8-8'-diamine and Barriers of Atropisomerization of the Related Binaphthyls, *Tetrahedron: Asymmetry*, **18**, 1017-1021 (2007).

Kawabata T: An Organocatalytic Regioselective Acylation of Carbohydrates: Toward the Development of Intelligent Catalysts, *J. Syn. Org. Chem. Japan*, **65**, 1081-1088 (2007).

[Others]

Kawabata T: Approaches toward Fascinating Molecular Transformations, *Farumashia*, **43**, 242-244 (2007) (in Japanese).

— Advanced Inorganic Synthesis —

Oka K, Azuma M, Narumi Y, Kindo K, Hayashi N, Shimakawa Y, Takano M: Synthesis and Physical Property of Triangular Lattice Antiferromagnet InFe₂O₄, *Funtai oyobi Funmatsu Yakini*, **54**, 53-57 (2007) (in Japanese).

Kawai M, Saito T, Hayashi N, Azuma M, Takano M, Shimakawa Y: Synthesis of Layered Compounds AFe_{6-x}Mn_xO₁₁ (A=Ba, Sr) by High-Pressure Technique, *Funtai oyobi Funmatsu Yakini*, **54**, 58-63 (2007) (in Japanese).

Azuma M, Kanda H, Belik A A, Shimakawa Y, Takano M: Magnetic and Structural Properties of BiFe_{1-x}Mn_xO₃, *J. Mag. Mag. Mat.*, **310**, 1177-1179 (2007).

Oba N, Kageyama H, Saito T, Azuma M, Paulus W, Kitano T, Ajiro Y, Yoshimura K: Synchrotron X-Ray Diffraction Study on the Square-Lattice Antiferromagnets (CuCl)LaNb₂O₇ and (FeCl)LaNb₂O₇, *J. Mag. Mag. Mat.*, **310**, 1337-1339 (2007).

Saito T, Williams A, Attfield J P, Wuernisha T, Kamiyama T, Ishiwata S, Takeda Y, Shimakawa Y, Takano M: Neutron Diffraction Study of a Layered Cobalt Oxide SrCo₆O₁₁, *J. Mag. Mag. Mat.*, **310**, 1584-1586 (2007).

Kohsaka Y, Taylor C, Fujita K, Schmidt A, Lupien C, Hanaguri T, Azuma M, Takano M, Eisaki E, Takagi H, Uchida S, Davis J C: An Intrinsic Bond-Centered Electronic Glass with Unidirectional Domains in Underdoped Cuprates, *Science*, **315**, 1380-1385 (2007).

Sakai M, Masuno A, Kan D, Hashisaka M, Takata K, Azuma M, Takano M, Shimakawa Y: Multiferroic Thin Film of Bi₂NiMnO₆ with Ordered Double-Perovskite Structure, *Appl. Phys. Lett.*, **90**, [072903-1]-[072903-3] (2007).

Ishiwata S, Azuma M, Takano M: Structure and Physical Properties of Perovskite $\text{Bi}_{0.8}\text{Pb}_{0.2}\text{NiO}_3$ in Unusual Valence State $\text{A}^{4+}\text{B}^{2+}\text{O}_3$, *Chem. Mater.*, **19**, 1964-1967 (2007).

Smadici S, Abbamonte P, Taguchi M, Kohsaka Y, Sasagawa T, Azuma M, Takano M, Takagi H: Absence of Long-Ranged Charge Order in $\text{Na}_{1-x}\text{Ca}_x\text{CuO}_2\text{Cl}_2$ ($x=0.08$), *Phys. Rev. B*, **75**, [075104-1]-[075104-4] (2007).

Shen K M, Ronning F, Meevasana W, Lu D H, Ingle N J C, Baumberger F, Lee W S, Miller L L, Kohsaka Y, Azuma M, Takano M, Takagi H, Shen Z-X: Angle-Resolved Photoemission Studies of Lattice Polaron Formation in the Cuprate $\text{Ca}_2\text{CuO}_2\text{Cl}_2$, *Phys. Rev. B*, **75**, [075115-1]-[075115-5] (2007).

Belik A A, Iikubo S, Yokosawa T, Kodama K, Igawa N, Shamoto S, Azuma M, Takano M, Kimoto K, Matsui Y, Takayama-Muromachi E: Origin of the Monoclinic-to-Monoclinic Phase Transition and Evidence for the Centrosymmetric Crystal Structure of BiMnO_3 , *J. Am. Chem. Soc.*, **129**, 971-977 (2007).

Hashisaka M, Kan D, Masuno A, Terashima T, Takano M, Mibu K: Spin-Filtering Effect of Ferromagnetic Semiconductor $\text{La}_2\text{NiMnO}_6$, *J. Mag. Mag. Mat.*, **310**, 1975-1977 (2007).

Ishiwata S, Terasaki I, Ishii F, Nagaosa N, Mukuda H, Kitaoka Y, Saito T, Takano M: Two-Staged Magnetoresistance Driven by the Ising-Like Spin Sublattice in $\text{SrCo}_6\text{O}_{11}$, *Phys. Rev. Lett.*, **98**, [217201-1]-[217201-4] (2007).

Yamada I, Azuma M, Shimakawa Y, Takano M: Single Crystal Growth of *A*-Site Deficient Superconductor $\text{Ca}_{2-x}\text{CuO}_2\text{Cl}_2$, *Physica C*, **460-462**, 420-421 (2007).

Hanaguri T, Kohsaka Y, Davis J C S, Lupien C, Yamada I, Azuma M, Takano M, Ohishi K, Takagi H: Low-Energy Spectroscopic Mapping Studies in Optimally-Doped $\text{Ca}_{2-x}\text{Na}_x\text{CuO}_2\text{Cl}_2$, *Physica C*, **460-462**, 954-955 (2007).

Kan D, Sakata O, Kimura S, Takano M, Shimakawa Y: Structural Characterization of Ar^+ -Irradiated SrTiO_3 Showing Room-Temperature Blue Luminescence, *Jpn. J. Appl. Phys.*, **46**, L471-L473 (2007).

Shimakawa Y, Kan D, Kawai M, Sakai M, Inoue S, Azuma M, Kimura S, Sakata O: Direct Observation of *B*-Site Ordering in Multiferroic $\text{Bi}_2\text{NiMnO}_6$ Thin Film, *Jpn. J. Appl. Phys.*, **46**, L845-L847 (2007).

Takata K, Yamada I, Azuma M, Takano M, Shimakawa Y: Magnetoresistance and Electronic Structure of the Half-Metallic Ferromagnet $\text{BiCu}_3\text{Mn}_4\text{O}_{12}$, *Phys. Rev. B*, **76**, [024429-1]-[024429-4] (2007).

Shiraki H, Saito T, Yamada T, Tsujimoto M, Azuma M, Kurata H, Isoda S, Takano M, Shimakawa Y: Ferromagnetic Cuprates $\text{CaCu}_3\text{Ge}_2\text{O}_{12}$ and $\text{CaCu}_3\text{Sn}_2\text{O}_{12}$ with *A*-Site Ordered Perovskite Structure, *Phys. Rev. B*, **76**, [140403-1]-[140403-4] (2007).

Lancaster T, Blundell S J, Baker P J, Pratt F L, Hayes W, Yamada I, Azuma M, Takano M: A Muon-Spin Relaxation Study of BiMnO_3 , *J. Phys.: Condens. Matter*, **19**, [376203-1]-[376203-8] (2007).

Azuma M, Carlsson S, Rodgers J, Tucker M G, Tsujimoto M, Ishiwata S, Isoda S, Shimakawa Y, Takano M, Attfield J P: Pressure-Induced Intermetallic Valence Transition in BiNiO_3 , *J. Am. Chem. Soc.*, **129**, 14433-14436 (2007).

DIVISION OF MATERIALS CHEMISTRY **— Chemistry of Polymer Materials —**

Chung H, Ohno K, Fukuda T, Composto R J: Internal Phase Separation Driven Dewetting in Polymer Blend and Nanocomposite Films, *Macromolecules*, **40**, 384-388 (2007).

Morinaga T, Ohkura M, Ohno K, Tsujii Y, Fukuda T: Monodisperse Silica Particles Grafted with Concentrated Oxetane-Carrying Polymer Brushes: Their Synthesis by Surface-Initiated Atom Transfer Radical Polymerization and Use for Fabrication of Hollow Spheres, *Macromolecules*, **40**, 1159-1164 (2007).

Morinaga T, Ohno K, Tsujii Y, Fukuda T: Two-Dimensional Ordered Arrays of Monodisperse Silica Particles Grafted with Concentrated Polymer Brushes, *Eur. Polym. J.*, **43**, 243-248 (2007).

Kwak Y, Tezuka M, Goto A, Fukuda T, Yamago S: Kinetic Study on Role of Ditelluride for Organotellurium-Mediated Living Radical Polymerization (TERP), *Macromolecules*, **40**, 1881-1885 (2007).

Yamago S, Kayahara E, Kotani M, Ray B, Kwak Y, Goto A, Fukuda T: Highly Controlled Living Radical Polymerization through Dual Activations of Organobismuthines, *Angew. Chem., Int. Ed.*, **46**, 1304-1306 (2007).

Ohno K, Morinaga T, Takeno S, Tsujii Y, Fukuda T: Suspensions of Silica Particles Grafted with Concentrated Polymer Brush: Effects of Graft Chain Length on Brush Layer Thickness and Colloidal Crystallization, *Macromolecules*, **40**, 9143-9150 (2007).

Yoshikawa C, Goto A, Tsujii Y, Ishizuka N, Nakanishi K, Fukuda T: Surface Interaction of Well-Defined, Concentrated Poly(2-hydroxyethyl methacrylate) Brushes with Proteins, *J. Polym. Sci., Part A: Polym. Chem.*, **45**, 4795-4803 (2007).

Yoshikawa C, Goto A, Ishizuka N, Nakanishi K, Kishida A, Tsujii Y, Fukuda T: Size-Exclusion Effect and Protein Repellency of Concentrated Polymer Brushes Prepared by Surface-Initiated Living Radical Polymerization, *Macromol. Symp.*, **248**, 189-198 (2007).

Goto A, Zushi H, Hirai N, Wakada T, Kwak Y, Fukuda T: Germanium- and Tin-Catalyzed Living Radical Polymerizations of Styrene and Methacrylates, *Macromol. Symp.*, **248**, 126-131 (2007).

Goto A, Zushi H, Hirai N, Wakada T, Tsujii Y, Fukuda T: Living Radical Polymerizations with Germanium, Tin, and Phosphorus Catalysts—Reversible Chain Transfer Catalyzed Polymerization (RTCP), *J. Am. Chem. Soc.*, **129**, 13347-13354 (2007).

Goto A, Scaiano J C, Marette L: Photolysis of an Alkoxyamine Using Intramolecular Energy Transfer from a Quinoline Antenna—Towards Photo-Induced Living Radical Polymerization, *Photochem. Photobiol. Sci.*, **6**, 833-835 (2007).

Fukuda T, Tsujii Y, Ohno K: Grafting and Polymer Brushes on Solid Surfaces, In *Macromolecular Engineering: Precise Synthesis, Materials Properties, Applications*, Matyjaszewski K, Gnanou Y, Leibler L Eds, Wiley-VCH, Weinheim, 1137-1178 (2007).

[Other]

Fukuda T, Morinaga T, Ohno K, Tsujii Y: A New Family of Colloidal Crystal Constructed by Concentrated Polymer Brush-Afforded Fine Silica Particles, *Ann. Rep. Res. Inst. Chem. Fib. (Kasen-Kouenshu)*, **64**, 1-9 (2007) (in Japanese).

— Polymer Controlled Synthesis —

Yamada T, Iida K, Yamago S: Living Radical Polymerization—Current Status and Future Perspective, *Kobunshi Ronbunshu*, **64**(6), 329-342 (2007) (in Japanese).

Mutoh Y, Murai T, Yamago S: Synthesis and Properties of Telluroides, *J. Organomet. Chem.*, **692**, 129-135 (2007).

Yamago S, Iida K, Yoshida J: Experimental and Theoretical Studies on Formal Sigma-Bond Metathesis of Silyl Tellurides with Alkyl Halides, *J. Organomet. Chem.*, **692**, 664-670 (2007).

Kwak Y, Tezuka M, Goto A, Fukuda T, Yamago S: Kinetic Study on Role of Ditetelluride for Organotellurium-Mediated Living Radical Polymerization (TERP), *Macromolecules*, **40**(6), 1881-1885 (2007).

Yamago S, Kayahara E, Kotani M, Ray B, Kwak Y, Goto A, Fukuda T: Highly Controlled Living Radical Polymerization through Dual Activation of Organobismuthines, *Angew. Chem. Int. Ed.*, **46**, 1304-1306 (2007).

Yusa S, Yamago S, Sugahara M, Morikawa S, Yamamoto T, Morishima Y: Thermo-Responsive Diblock Copolymers of Poly(N-isopropylacrylamide) and Poly(N-vinyl-2-pyrrolidone) Synthesized via Organotellurium-Mediated Controlled Radical Polymerization (TERP), *Macromolecules*, **40**(16), 5907-5915 (2007).

Yoshioka T, Fujimura T, Manabe N, Yokota Y, Tsuji M: Morphological Study on Three Kinds of Two-Dimensional Spherulites of Poly(butylene terephthalate) (PBT), *Polymer*, **48**(19), 5780-5787 (2007).

Schaper A K, Kurata H, Yoshioka T, Tsuji M: Composite Structure of Liquid Crystal/Polymer Nanotubes Revealed by High-Angle Annular Dark-Field Scanning Transmission Electron Microscopy, *Microsc. Microanal.*, **13**(5), 336-341 (2007).

Nakayama A, Kawahara Y, Hayakawa Y, Takahashi R, Yoshioka T, Tsuji M: Structural Study on Electrospun Nanofibers of Polydioxanone, *Sen'i Gakkaishi*, **63**(10), 230-234 (2007) (in Japanese).

Ikeda Y, Kato A, Shimanuki J, Kohjiya S, Tosaka M, Poompradub S, Toki S, Hsiao B S: Nano-Structural Elucidation in Carbon Black Loaded NR Vulcanizate by 3D-TEM and in situ WAXD Measurements, *Rubber Chem. Technol.*, **80**(2), 251-264 (2007).

Kohjiya S, Tosaka M, Furutani M, Ikeda Y, Toki S, Hsiao B S: Role of Stearic Acid in the Strain-Induced Crystallization of Crosslinked Natural Rubber and Synthetic cis-1,4-Polyisoprene, *Polymer*, **48**(13), 3801-3808 (2007).

Tosaka M, Senoo K, Kohjiya S, Ikeda Y: Crystallization of Stretched Network Chains in Cross-Linked Natural Rubber, *J. Appl. Phys.*, **101**, [84909-1]-[84909-8] (2007).

Ikeda Y, Yasuda Y, Makino S, Yamamoto S, Tosaka M, Senoo K, Kohjiya S: Strain-Induced Crystallization of Peroxide-Cross-linked Natural Rubber, *Polymer*, **48**(5), 1171-1175 (2007).

Tosaka M, Tsuji M, Kohjiya S, Nagayama K: Self-Assembly of Nano-Sized Arrays on Highly Oriented Thin Films of Poly(tetrafluoroethylene), *Mater. Sci. Forum*, **539-543**, 3525-3527 (2007).

Tosaka M: Strain-Induced Crystallization of Crosslinked Natural Rubber as Revealed by X-ray Diffraction Using Synchrotron Radiation, *Polymer J.*, **39**(12), 1207-1220 (2007).

[Others]

Yamago S: Living Radical Polymerization. Recent Topics, *Organometallic News*, **2**, 44-49 (2007).

Yamago S: Element Chemical Approach for New Precise Polymerization, *Mirai Zairyo*, **7**, 36-40 (2007) (in Japanese).

Yoshioka T, Kawahara Y, Tsuji M: Practical Approaches for Structure Analysis of High-Speed-Spun Polyester Fibers, *Sen'i Gakkaishi*, **63**(2), [P-39]-[P-47] (2007) (in Japanese).

— Inorganic Photonics Materials —

Mori R, Takahashi M, Yoko T: Domain Size Change of Spinodal Phase Separation Structure in the Sol-Gel Derived TiO₂ Thin Film, *J. Mat. Res.*, **21**, 270-275 (2006).

Enkhtuvshin D, Takahashi M, Yoko T: Cr³⁺-TiO₂ Thin Film Electrodes: Effects of the Homogeneous- and the Sectional-doping, *J. Electrochem. Soc.*, **153**, G534-G538 (2006).

Menaa B, Masai H, Takahashi M, Tokuda Y, Yoko T: Network Modification and Water Durability Improvement of Inorganic-organic Hybrid Tin-silico-phosphate Low-melting Glasses by Incorporation of Polycarboxylic Acids, *J. Solid State Chem.*, **176**, 493-500 (2006).

Kuniyoshi M, Takahashi M, Tokuda Y, Yoko T: Preparation of Phenyl-modified Siloxane Glasses with Softening Temperature Controlled by Rapid Heat Treatment (RHT), *Chem. Lett.*, **35**, 1384-1385 (2006).

Menaa B, Takahashi M, Tokuda Y, Yoko T: Preparation and Properties of Polyphenylsiloxane-based Hybrid Glass Thick-Films Obtained from a Non-Aqueous Coating Sol via a Single-Step Dip-Coating, *Opt. Mater.*, **29**, 806-813 (2007).

Kakiuchida H, Takahashi M, Tokuda Y, Masai H, Yoko T: Effect of Organic Group on Structure and Viscoelastic Properties of Organic-inorganic Polysiloxane Hybrid System, *J. Phys. Chem. B*, **111**, 982-988 (2007).

Menaa B, Takahashi M, Innocenzi P, Yoko T: Crystallization in Hybrid Organic-inorganic Materials Induced by Self-organization in Basic Conditions, *Chem. Mat.*, **19**, 1946-1953 (2007).

Kuniyoshi M, Takahashi M, Tokuda Y, Yoko T: Thermosoftening Phenyl Siloxane Glasses Prepared via Concentration of Sol: Sol Concentration Method (SCM), *J. Non-Cryst. Solids*, **353**, 4162-4169 (2007).

Takahashi M, Maeda T, Uemura K, Yao J, Tokuda Y, Kaji H, Marcelli A, Innocenzi P, Yoko T: Photo-induced Formation of Wrinkled Microstructures with Long-range Order in Thin Oxide Films, *Advanced Materials*, **19**(24), 4343-4346 (2007).

Takashima H, Fujiwara H, Takeuchi S, Sasaki K, Takahashi M: Fiber-microsphere Laser with a Sub-micrometer Sol-gel Silica Glass Layer Co-doped with Erbium, Aluminum and Phosphorus, *Appl. Phys. Lett.*, **90**, [10113-1]-[10113-3] (2007).

— Nanospintronics —

Yamada K, Kasai S, Nakatani Y, Kobayashi K, Kohno H, Thiaville A, Ono T: Electrical Switching of the Vortex Core in a Magnetic Disk, *Nature Mat.*, **6**, 269-273 (2007).

Yamaguchi A, Miyajima H, Ono T, Suzuki Y, Yuasa S: The Rectification of Radio-Frequency Signal by Magnetic Domain Wall in a Single-Layered Ferromagnetic Nanowire, *Appl. Phys. Lett.*, **91**, [132509-1]-[132509-3] (2007).

Nozaki T, Maekawa H, Mizuguchi M, Shiraishi M, Shinjo T, Suzuki Y, Maehara H, Kasai S, Ono T: Substantial Reduction in the Depinning Field of Vortex Domain Walls Triggered by Spin-transfer Induced Resonance, *Appl. Phys. Lett.*, **91**, [082502-1]-[082502-3] (2007).

Tamada Y, Yamamoto S, Takano M, Nasu S, Ono T: Well-ordered $L1_0$ -FePt Nanoparticles Synthesized by Improved SiO_2 -nanoreactor Method, *Appl. Phys. Lett.*, **90**, [162509-1]-[162509-3] (2007).

Yamaguchi A, Miyajima H, Kasai S, Ono T: Self-homodyne rf Demodulator Using a Ferromagnetic Nanowire, *Appl. Phys. Lett.*, **90**, [212505-1]-[212505-3] (2007).

Yamaguchi A, Miyajima H, Ono T, Suzuki Y, Yuasa S, Tulapurkar A, Nakatani Y: Rectification of Radio Frequency Current in Ferromagnetic Nanowire, *Appl. Phys. Lett.*, **90**, [182507-1]-[182507-3] (2007).

Kostylev M P, Gubbiotti G, Hu J G, Carlotti G, Ono T, Stamps R L: Dipole-exchange Propagating Spin-wave Modes in Metallic Ferromagnetic Stripes, *Phys. Rev. B*, **76**, [054422-1]-[054422-8] (2007).

Montoncello F, Giovannini L, Nizzoli F, Vavassori P, Grimsditch M, Ono T, Gubbiotti G, Tacchi S, Carlotti G: Soft Spin Waves and Magnetization Reversal in Elliptical Permalloy Nanodots: Experiments and Dynamical Matrix Results, *Phys. Rev. B*, **76**, [024426-1]-[024426-6] (2007).

Gubbiotti G, Madami M, Tacchi S, Socino G, Carlotti G, Ono T: Effect of Eccentricity on the Spin-wave Spectrum of NiFe/Cu/NiFe Pillars with Elliptical Cross Section, *J. App. Phys.*, **101**, [09F502-1]-[09F502-3] (2007).

Tamada Y, Morimoto Y, Yamamoto S, Takano M, Nasu S, Ono T: Effects of Annealing Time on Structural and Magnetic Properties of $L1_0$ -FePt Nanoparticles Synthesized by the SiO_2 -nanoreactor Method, *J. Magn. Mag. Mat.*, **310**, 2381-2383 (2007).

Kasai S, Nakatani Y, Kobayashi K, Kohno H, Ono T: Magnetization Reversal in a Ferromagnetic Circular Dot under Current Induced Resonant Excitation, *J. Magn. Mag. Mat.*, **310**, 2351-2352 (2007).

Gubbiotti G, Tacchi S, Carlotti G, Ono T, Roussigne Y, Tiberkevich V S, Slavin A N: Discrete Modes of a Ferromagnetic Stripe Dipolarly Coupled to a Ferromagnetic Film: a Brillouin Light Scattering Study, *J. Phys.: Cond. Matt.*, **19**, 246221 (2007).

Ono T, Kohno H: Spin-transfer Motor, *J. Magn. Soc. Jpn.*, **31**, 305 (2007).

Yamamoto S, Tamada Y, Ono T, Takano M: Easy Axis Alignment of $L1_0$ -FePt Nanoparticles Synthesized by the “ SiO_2 -Nanoreactor” Method, *J. Magn. Soc. Jpn.*, **31**, 199-202 (2007) (in Japanese).

Ono T: Current-driven Domain Wall Motion and Its Application to Spintronic Devices, *Kinzoku*, **77**, 20-24 (2007) (in Japanese).

DIVISION OF BIOCHEMISTRY

— Biofunctional Design-Chemistry —

Futaki S, Asami K: Ligand-Induced Extramembrane Conformation Switch Controlling Alamethicin Assembly and the Channel Current, *Chem. Biodiv.*, **4**, 1313-1322 (2007).

Futaki S, Nakase I, Tadokoro A, Takeuchi T, Jones A T: Arginine-Rich Peptides and Their Internalization Mechanisms, *Biochem. Soc. Trans.*, **35**, 784-787 (2007).

Fretz M M, Penning N A, Al-Taei S, Futaki S, Takeuchi T, Nakase I, Storm G, Jones A T: Temperature-, Concentration- and Cholesterol-Dependent Translocation of L- and D-octa-arginine across the Plasma and Nuclear Membrane of CD34+ Leukaemia Cells, *Biochem J.*, **403**, 335-342 (2007).

Kameyama S, Horie M, Kikuchi T, Omura T, Tadokoro A, Takeuchi T, Nakase I, Sugiura Y, Futaki S: Acid Wash in Determining Cellular Uptake of Fab/Cell-Permeating Peptide Conjugates, *Biopolymers (Peptide Science)*, **88**, 98-107 (2007).

Khalil I A, Kogure K, Futaki S, Hama S, Akita H, Ueno M, Kishida H, Kudoh M, Mishina Y, Kataoka K, Yamada M, Harashima H: Octaarginine-Modified Multifunctional Envelope-Type Nanoparticles for Gene Delivery, *Gene Ther.*, **14**, 682-689 (2007).

Kimura T, Ninomiya K, Futaki S: NMR Investigation of the Electrostatic Effect in Binding of a Neuropeptide, Achatin-I, to Phosphatidylcholine Bilayers, *J. Phys. Chem. B*, **111**, 3831-3838 (2007).

Homhuan A, Kogure K, Akaza H, Futaki S, Naka T, Fujita Y, Yano I, Harashima H: New Packaging Method of Mycobacterial Cell Wall Using Octaarginine-Modified Liposomes: Enhanced Uptake by and Immunostimulatory Activity of Dendritic Cells, *J. Control Release*, **120**, 60-69 (2007).

Nakamura Y, Kogure K, Futaki S, Harashima H: Octaarginine-Modified Multifunctional Envelope-Type Nano Device for siRNA, *J. Control Release*, **119**, 360-367 (2007).

Yan W, Imanishi M, Futaki S, Sugiura Y: Alpha-Helical Linker of an Artificial 6-Zinc Finger Peptide Contributes to Selective DNA Binding to a Discontinuous Recognition Sequence, *Biochemistry*, **46**, 8517-8524 (2007).

Maiti K K, Lee W S, Takeuchi T, Watkins C, Fretz M, Kim D-C, Futaki S, Jones A, Kim K-T, Chung S-K: Guanidine-Containing Molecular Transporters: Sorbitol-Based Transporters Show High Intracellular Selectivity toward Mitochondria, *Angew. Chem. Int. Ed. Engl.*, **46**, 5880-5884 (2007).

Hayashi Y, Takayama K, Suehisa Y, Fujita T, Nguyen J T, Futaki S, Yamamoto A, Kiso Y: Development of Oligoarginine-Drug Conjugates Linked to New Peptidic Self-Cleavable Spacers toward Effective Intestinal Absorption, *Bioorg. Med. Chem. Lett.*, **17**, 5129-5132 (2007).

Nakase I, Tadokoro A, Kawabata N, Takeuchi T, Katoh H, Hiramoto K, Negishi M, Nomizu M, Sugiura Y, Futaki S: Interaction of Arginine-Rich Peptides with Membrane-Associated Proteoglycans Is Crucial for Induction of Actin Organization and Macropinocytosis, *Biochemistry*, **46**, 492-501 (2007).

Noguchi H, Nakai Y, Ueda M, Masui Y, Futaki S, Kobayashi N, Hayashi S, Matsumoto S: Activation of c-Jun NH2-Terminal Kinase (JNK) Pathway during Islet Transplantation and Prevention of Islet Graft Loss by Intraportal Injection of JNK Inhibitor, *Diabetologia*, **50**, 612-619 (2007).

Dhanasekaran M, Negi S, Imanishi M, Sugiura Y: DNA-Binding Ability of GAGA Zinc Finger Depends on the Nature of Amino Acids Present in the Beta-Hairpin, *Biochemistry*, **46**, 7506-7513 (2007).

— Chemistry of Molecular Biocatalysts —

Han L, Hiratake J, Kamiyama A, Sakata K: Design, Synthesis and Evaluation of γ -Phosphono Diester Analogues of Glutamate as Highly Potent Inhibitors and Active Site Probes of γ -Glutamyl Transpeptidase, *Biochemistry*, **46**, 1432-1447 (2007).

Nakagawa Y, Hasegawa A, Hiratake J, Sakata K: Engineering of *Pseudomonas aeruginosa* Lipase by Directed Evolution for Enhanced Amidase Activity: Mechanistic Implication for Amide Hydrolysis by Serine Hydrolases, *Protein Eng Des Sel*, **20**, 339-346 (2007).

Mizutani M: Correlation between Molecular Evolution of P450s and Evolution of Secondary Metabolism, *Tanpakushitsu Kakusan Koso*, **52**, 1454-1464 (2007) (in Japanese).

Mizutani M: Biochemical Studies on Cytochrome P450 Monooxygenases in Biosynthesis and Catabolism of Abscissic Acid and Plant Steroids, *Regulation of Plant Growth and Development*, **42**, 260-268 (2007) (in Japanese).

Shimomura H, Etoh H, Mizutani M, Hirai N, Todoroki Y: Effect of the Minor ABA Metabolite 7'-Hydroxy-ABA on Arabidopsis ABA 8'-Hydroxylase CYP707A3, *Bioorg Med Chem Lett*, **17**, 4977-4981 (2007).

Ueno K, Yoneyama H, Mizutani M, Hirai N, Todoroki Y: Asymmetrical Ligand Binding by Abscissic Acid 8'-Hydroxylase, *Bioorg Med Chem*, **15**, 6311-6322 (2007).

Cho J Y, Mizutani M, Shimizu B, Kinoshita T, Ogura M, Tokoro K, Lin M L, Sakata K: Chemical Profiling and Gene Expression Profiling during the Manufacturing Process of Taiwan Oolong Tea "Oriental Beauty", *Biosci Biotechnol Biochem*, **71**, 1476-1486 (2007).

Ahn Y O, Saino H, Mizutani M, Shimizu B, Sakata K: Vicianin Hydrolase Is a Novel Cyanogenic β -Glycosidase Specific to β -Vicianoside (6-O- α -L-Arabinopyranosyl- β -D-Glucopyranoside) in Seeds of *Vicia angustifolia*, *Plant Cell Physiol*, **48**, 938-947 (2007).

— Molecular Biology —

Li S, Kimura M, Takashima T, Hayashi K, Inoue K, Ishiguro R, Sugisaki H, Maruyama K: Role of Cysteine Residues in 4-Oxalomesaconate Hydratase from *Pseudomonas ochraceae* NGJ1, *Biosci. Biotechnol. Biochem.*, **71**, 449-458 (2007).

Taniguchi M, Sasaki N, Tsuge T, Aoyama T, Oka A: ARR1 Directly Activates Cytokinin Response Genes That Encode Proteins with Diverse Regulatory Functions, *Plant Cell Physiol.*, **48**, 263-277 (2007).

Katou S, Kuroda K, Seo S, Yanagawa Y, Tsuge T, Yamazaki M, Miyao A, Hirochika H, Ohashi Y: A Calmodulin-Binding Mitogen-Activated Protein Kinase Phosphatase Is Induced by Wounding and Regulates the Activities of Stress-Related Mitogen-Activated Protein Kinases in Rice, *Plant Cell Physiol.*, **48**, 332-344 (2007).

Pick E, Lau O S, Tsuge T, Menon S, Tong Y, Dohmae N, Plafker S M, Deng X W, Wei N: Mammalian DET1 Regulates Cul4A Activity and Forms Stable Complexes with E2 Ubiquitin-Conjugating Enzymes, *Mol. Cell. Biol.*, **27**, 4708-4719 (2007).

Li L, Hou X, Tsuge T, Ding M, Aoyama T, Oka A, Gu H, Zhao Y, Qu L J: The Possible Action Mechanisms of Indole-3-Acetic Acid Methyl Ester in *Arabidopsis*, *Plant Cell Reports*, DOI 10.1007/s00299-007-0458-9 (2007).

[Others]

Aki S, Oka A, Tsuge T: *Arabidopsis* CSN1 Binds SAP130, a Component of the mRNA Splicing Machinery, *Plant Cell Physiol.*, **48**, S61-S61 (2007).

Kusano H, Yasuda K, Shimada H, Oka A, Aoyama T: *Arabidopsis* AtPIP5K3 Gene Controlling Root-hair Morphogenesis, *Plant Cell Physiol.*, **48**, S82-S82 (2007).

Tsuge T, Aki S, Taniguchi M, Dohmae N, Menon S, Pick E, Wei N, Oka A: Identifying Novel Regulation beyond Proteolysis Regulation of the COP9 Signalosome, *Plant Cell Physiol.*, **48**, S218-S218 (2007).

— Chemical Biology —

Sato S, Kwon Y, Kamisuki S, Srivastava N, Mao Q, Kawazoe Y, Uesugi M: Polyproline-Rod Approach to Isolating Protein Targets of Bioactive Small Molecules: Isolation of a New Target of Indomethacin, *J. Am. Chem. Soc.*, **129**(4), 873-880 (2007).

DIVISION OF ENVIRONMENTAL CHEMISTRY

— Molecular Materials Chemistry —

Ohgi H, Yang H, Sato T, Horii F: Solid-State ^{13}C NMR Investigation of the Structure and Hydrogen Bonding for Stereoregular Poly(vinyl alcohol) Films in the Hydrated State, *Polymer*, **48**, 3850-3857 (2007).

Tsunashima Y, Ikuno M, Horii F: Low-Temperature Dynamic Light Scattering. I. Structural Reorganization and Physical Gel Formation in Cellulose Triacetate/Methyl Acetate Dilute Solution at -99 - $+45^\circ\text{C}$, *Biopolymer*, **82**, 222-233 (2006).

Kaji H, Horii F: Investigation of Dynamics of Poly(dimethylsilane) in the Mesophase by Solid-State ^{29}Si NMR: Evidence for Rotator Phase, *Macromolecules*, **40**, 5420-5423 (2007).

Dohi H, Kimura H, Kotani M, Matsunaga T, Yamauchi K, Kaji H, Asakura T: Characterization of Molecular Orientation of Stretched Natural Rubber by Solid-State ^{13}C NMR, *Polym. J.*, **39**, 502-503 (2007).

Kotani M, Dohi H, Kimura H, Muraoka K, Kaji H: Characterization of Carbon Filler Distribution Ratio in Polyisoprene / Polybutadiene Rubber Blends by High-Resolution Solid-State ^{13}C NMR, *Macromolecules*, **40**, 9451-9454 (2007).

Takahashi M, Maeda T, Uemura K, Yao J, Tokuda Y, Yoko T, Kaji H, Marcelli A, Innocenzi P: Photo-Induced Formation of Wrinkled Microstructures with Long-Range Order in Thin Oxide Film, *Adv. Mater.*, **19**, 4343-4346 (2007).

Imahori H, Ueda M, Kang S, Hayashi H, Hayashi S, Kaji H, Seki S, Saeki A, Tagawa S, Umeyama T, Matano Y, Yoshida K, Isoda S, Shiro M, Tkachenko N V, Lemmetyinen H: Effects of Porphyrin Substituents on Film Structure and Photoelectrochemical Properties of Porphyrin/Fullerene Composite Clusters Electrochemically Deposited on Nanostructured SnO_2 Electrodes, *Chem. Eur. J.*, **13**, 10182-10193 (2007).

[Others]

Horii F: Surface High-Resolution NMR, *Chem. Ind.*, **58**, 825-828 (2007) (in Japanese).

Horii F: Surface High-Resolution NMR, *Proc. Soc. Solid-State NMR Mater.*, **No.41/6**, 17-20 (2007) (in Japanese).

Kusaka M, Luo Q, Kanie Y, Iwata D, Hirai A, Horii F: Surface High-Resolution NMR—Surface Structure of Different Polymer Materials, *Rep. Poval Comm.*, **No.131**, 17-24 (2007) (in Japanese).

Luo Q, Horii F: Solid-State NMR—Precise Measurements for Solid Materials, *Instrumental Analyses for Polymer Materials*, 115-133 (2007) (in Japanese).

Horii F: Dynamics of Amorphous Polymers, *Modern Magnetic Resonance*, 603-609 (2006).

Kaji H: Precise Analysis Techniques for Organic LED Materials and the Examples— from X-ray Diffraction to Solid-State NMR, *Developments of Organic Electronics*, 64-77 (2007) (in Japanese).

Kaji H: Polymer LEDs—The Feature of Materials and the Potential, *Cutting-Edge Technology of Polymer Materials*, 137-143 (2007) (in Japanese).

Kaji H: Polymer Science in Future, *Kobunshi*, **56**, 35 (2007) (in Japanese).

Kaji H, Murata H: Detection of Organic Materials in OLEDs and Trial of the Analysis of Device Degradation by Solution NMR with Cryogenic Probes, *Device Physics, Material Chemistry, and Device Application of Organic Light Emitting Diodes*, 45-52 (2007) (in Japanese).

Horii F: Disordered Structure of Polymer Materials as Revealed by High-Resolution Solid-State NMR Spectroscopy, *Proc. of ICR International Symposium (ICRIS) '07*, 141-142 (2007).

Yamada T, Kaji H, Horii F: Molecular and Electronic Structure Analyses of $\text{N,N}'$ -diphenyl- $\text{N,N}'$ -di(m-tolyl)benzidine by Solid-State NMR and Quantum Chemical Calculations, *Proc. of ICR International Symposium (ICRIS) '07*, 33-36 (2007).

Luo Q, Suzuki S, Kanie Y, Kaji H, Horii F, Shimizu T, Tansho M, Takegoshi K, Nemoto T, Mizuno T: Solid-State NMR Characterization of Structure and Hydrogen Bonding of Polymer Materials, *Proc. of ICR International Symposium (ICRIS) '07*, 143-146 (2007).

Hirai A, Ikuno M, Horii F, Tsuji M: Formation and Structure of Liquid Crystals in Aqueous Suspensions of Tunicate Cellulose Microfibrils, *Proc. of ICR International Symposium (ICRIS) '07*, 147-150 (2007).

Kaji H, Mino A, Yamada T, Horii F: Solid-State ^{29}Si NMR Characterization of Poly(dimethylsilane) in the Mesophase, *Proc. of ICR International Symposium (ICRIS) '07*, 151-152 (2007).

— Hydrospheric Environment Analytical Chemistry —

Firdaus M L, Norisuye K, Sato T, Urushihara S, Nakagawa Y, Umetani S, Sohrin Y: Preconcentration of Zr, Hf, Nb, Ta and W in Seawater Using Solid-phase Extraction on TSK-8-hydroxyquinoline Resin and Determination by Inductively Coupled Plasma-mass Spectrometry, *Anal. Chim. Acta*, **583**, 296-302 (2007).

Nakatsuka S, Okamura K, Norisuye K, Sohrin Y: Simultaneous Determination of Suspended Particulate Trace Metals (Co, Ni, Cu, Zn, Cd and Pb) in Seawater with Small Volume Filtration Assisted by Microwave Digestion and Flow Injection Inductively Coupled Plasma Mass Spectrometer, *Anal. Chim. Acta*, **594**, 52-60 (2007).

Norisuye K, Ezoe M, Nakatsuka S, Umetani S, Sohrin Y: Distribution of Bioactive Trace Metals (Fe, Co, Ni, Cu, Zn and Cd) in the Sulu Sea and Its Adjacent Seas, *Deep-Sea Res. II*, **54**, 14-37 (2007).

Fujino O, Kitatsuji M, Yoshida T, Umetani S: Determination of Lanthanoids in Hard Tissues of Shellfish by ICP-MS with Solvent Extraction, *Bunseki Kagaku*, **56**, 47-50 (2007) (in Japanese).

Umetani S, Ito M, Shimojo S, Kurahashi K, Yamazaki S, Ogura K: Solvent Extraction of Divalent Transition Metal Ions with Diaza-crown Ethers Having Two Acylpyrazolone Moieties, *Solvent Extr. Res. Dev., Japan*, **14**, 177-181 (2007).

[Others]

Sohrin Y, Mukai H: Basic Analytical Chemistry (2007) (in Japanese).

Firdaus M L, Norisuye K, Sohrin Y: Determination of Zr, Hf, Nb, Ta, Mo and W in Seawater, *Transaction of the RIOCI*, **20**, 45-46 (2007).

Sohrin Y: Water Environment and Chemistry, *The Fifth Series of Experimental Chemistry 20-2*, 17-23 (2007) (in Japanese).

Norisuye K: Heavy Metals, Simultaneous Multi-elemental Determination, *The 5th Series of Experimental Chemistry 20-2*, 293-298 (2007) (in Japanese).

Sohrin Y: The Lake Biwa, *The 5th Series of Experimental Chemistry 20-2*, 339-343 (2007) (in Japanese).

— Solution and Interface Chemistry —

Tsujino Y, Wakai C, Matubayasi N, Nakahara M: Intermolecular Proton Transfer from Formaldehyde Intermediate to Anisole in Noncatalytic Pyrolysis: Phenol Produced without Hydrolysis, *Chem. Lett.*, **35**, 1334-1335 (2006).

Yasaka Y, Wakai C, Matubayasi N, Nakahara M: Slowdown of H/D Exchange Reaction Rate and Water Dynamics in Ionic Liquids: Deactivation of Solitary Water Solvated by Small Anions in 1-Butyl-3-Methylimidazolium Chloride, *J. Phys. Chem. A*, **111**, 541-543 (2007).

Morooka S, Matubayasi N, Nakahara M: Kinetic Study on Disproportionations of C1 Aldehydes in Supercritical Water: Methanol from Formaldehyde and Formic Acid, *J. Phys. Chem. A*, **111**, 2697-2705 (2007).

Matubayasi N, Morooka S, Nakahara M, Takahashi H: Chemical Equilibrium of Formaldehyde and Methanediol in Hot Water: Free-Energy Analysis of the Solvent Effect, *J. Mol. Liq.*, **134**, 58-63 (2007).

Yasaka Y, Kubo M, Matubayasi N, Nakahara M: High-Sensitivity Raman Spectroscopy of Supercritical Water and Methanol over a Wide Range of Density, *Bull. Chem. Soc. Japan*, **80**, 1764-1769 (2007).

Yasaka Y, Wakai C, Matubayasi N, Nakahara M: Rotational Dynamics of Water and Benzene Controlled by Anion Field in Ionic Liquids: 1-Butyl-3-Methylimidazolium Chloride and Hexafluorophosphate, *J. Chem. Phys.*, **127**, [104506-1]-[104506-8] (2007).

Schroder C, Wakai C, Weingartner H, Steinhauser O: Collective Rotational Dynamics in Ionic Liquids: A Computational and Experimental Study of 1-Butyl-3-Methyl-Imidazolium Tetrafluoroborate, *J. Chem. Phys.*, **127**, [084511-1]-[084511-8] (2007).

[Others]

Yoshida K, Matubayasi N, Nakahara M: A Novel Method for Precise Density Determination of Supercritical Fluids over Wide Ranges of Density and Pressure, *The Review of High Pressure Science and Technology*, **16**, 379-380 (2006) (in Japanese).

Yoshida K, Matubayasi N, Nakahara M, Ikeda T, Anai T: A New High-Temperature Multinuclear-Magnetic-Resonance Probe for Structure, Dynamics, and Reaction in Supercritical Water, *JEOL News*, **42**, 16-20 (2007).

Yoshida K, Matubayasi N, Nakahara M, Ikeda T, Anai T: Development of New High-Temperature Multinuclear-Magnetic-Resonance Probe and Application to Structure, Dynamics, and Reaction in Supercritical Water, *JEOL News*, **39**, 1-7 (2007) (in Japanese).

Nakahara M, Matubayasi N, Yasaka Y: Proposal of Formic Acid as a Hydrogen Energy Source, *Chemistry*, **62** (October), 12-16 (2007) (in Japanese).

— Molecular Microbial Science —

Kawamoto J, Kurihara T, Kitagawa M, Kato I, Esaki N: Proteomic Studies of an Antarctic Cold-Adapted Bacterium, *Shewanella livingstonensis* Ac10, for Global Identification of Cold-Inducible Proteins, *Extremophiles*, **11**, 819-826 (2007).

Miyake R, Kawamoto J, Wei Y-L, Kitagawa M, Kato I, Kurihara T, Esaki N: Construction of a Low-Temperature Protein Expression System Using a Cold-Adapted Bacterium, *Shewanella* sp. Strain Ac10, as the Host, *Appl. Environ. Microbiol.*, **73**, 4849-4856 (2007).

Omi R, Jitsumori K, Yamauchi T, Ichihara S, Kurihara T, Esaki N, Kamiya N, Hirotsu K, Miyahara I: Expression, Purification and Preliminary X-Ray Characterization of DL-2-Haloacid Dehalogenase from *Methylobacterium* sp. CPA1, *Acta. Crystallograph. Sect. F Struct. Biol. Cryst Commun.*, **63**, 586-589 (2007).

Kudou D, Misaki S, Yamashita M, Tamura T, Takakura T, Yoshioka T, Yagi S, Hoffman R M, Takimoto A, Esaki N, Inagaki K: Structure of the Antitumour Enzyme L-Methionine γ -Lyase from *Pseudomonas putida* at 1.8 Å Resolution, *J. Biochem.*, **141**, 535-544 (2007).

Yoshida M, Oikawa T, Obata H, Abe K, Mihara H, Esaki N: Biochemical and Genetic Analysis of the γ -Resorcyate (2,6-Dihydroxybenzoate) Catabolic Pathway in *Rhizobium* sp. Strain MTP-10005: Identification and Functional Analysis of Its Gene Cluster, *J. Bacteriol.*, **189**, 1573-1581 (2007).

Yamanishi Y, Mihara H, Osaki M, Muramatsu H, Esaki N, Sato T, Hizukuri Y, Goto S, Kanehisa M: Prediction of Missing Enzyme Genes in a Bacterial Metabolic Network—Reconstruction of the Lysine-degradation Pathway of *Pseudomonas aeruginosa*, *FEBS J.*, **274**, 2262-2273 (2007).

Fujita M, Mihara H, Goto S, Esaki N, Kanehisa M: Mining Prokaryotic Genomes for Unknown Amino Acids: a Stop-codon-based Approach, *BMC Bioinformatics*, **8**, 225 (2007).

Saito M, Nishimura K, Wakabayashi S, Kurihara T, Nagata Y: Purification of Branched-Chain Amino Acid Aminotransferase from *Helicobacter pylori* NCTC 11637, *Amino Acids*, **33**, 445-449 (2007).

Saito M, Nishimura K, Hasegawa Y, Shinohara T, Wakabayashi S, Kurihara T, Ishizuka M, Nagata Y: Alanine Racemase from *Helicobacter pylori* NCTC 11637: Purification, Characterization and Gene Cloning, *Life Sciences*, **80**, 788-794 (2007).

[Others]

Mihara H, Esaki N: Selenoprotein, *Kinzoku*, **8**, 262-268 (2007) (in Japanese).

DIVISION OF MULTIDISCIPLINARY CHEMISTRY

— Polymer Materials Science —

Kanaya T, Matsuba G, Ogino Y, Nishida K, Shimazu H M, Shinohara T, Oku T, Suzuki J, Otomo T: Hierarchic Structure of Shish-Kebab by Neutron Scattering in a Wide Q Range, *Macromolecules*, **40**, 3650-3654 (2007).

Kanaya T, Takayama T, Ogino Y, Matsuba G, Nishida K: Precursor of Primary Nucleation in Isotactic Polystyrene Induced by Shear Flow, *Lecture Notes in Physics*, **714**, 87-96 (2007).

Matsuba G, Sakamoto S, Ogino Y, Nishida K, Kanaya T: Crystallization of Polyethylene Blends under Shear Flow. Effects of Crystallization Temperature and Ultrahigh Molecular Weight Component, *Macromolecules*, **40**, 7270-7275 (2007).

Inoue R, Kanaya T, Nishida K, Tsukushi I, Taylor J, Levett S, Gabrys B: Dynamic Anisotropy and Heterogeneity of Polystyrene Thin Films as Studied by Inelastic Neutron Scattering, *Eur. Phys. J. E*, **24**, 55-60 (2007).

Ogawa H, Kanaya T, Nishida K, Matsuba G: Phase Separation and Dewetting in Polymer Blend Thin Films, *Eur. Phys. J. Special Topics*, **141**, 189-192 (2007).

Miyazaki T, Inoue R, Nishida K, Kanaya T: X-ray Reflectivity Studies on Glass Transition of Free Standing Polystyrene Thin Films, *Eur. Phys. J. Special Topics*, **141**, 203-206 (2007).

Tsubouchi T, Nishida K, Kanaya T: Lower Critical Solution Temperature Type of Phase Separation in Aqueous Mixture of Polyelectrolytes, *Colloids and Surfaces B*, **56**, 265-269 (2007).

Sharma L, Ogino Y, Kanaya T, Iwata T, Doi Y: Semi-Continuous Shear Flow Investigation into Medium and High Molecular Weight Polyhydroxy Butyrate Blends, *Polymers & Polymer Composites*, **15**, 161-166 (2007).

Ji W, Sugimoto T, Kasazaki T, Nishida K, Kanaya T: Control of Phase Structure of Thermoplastic Polyurethane by Multiple Temperature Jump Method, *Kobunshi Ronbunshu*, **64**, 96-101 (2007) (in Japanese).

Shimizu K, Wang H, Matsuba G, Wang Z, Kim H, Peng W, Han C C: Interplay of Crystallization and Liquid-liquid Phase Separation in Polyolefin Blends: A Thermal History Dependence Study, *Polymer*, **48**, 4226-4234 (2007).

Furuya H, Takemura K, Kanaya T: Motional Coherency in Chain Dynamics of Glass-Forming Polymer, *Macromol. Symp*, **249/250**, 498-501 (2007).

Matsuba G, Nishida K, Kanaya T: The Effects of Ultra-high Molecular Weight Components on Crystallization under Shear Flow, *Kobunshi Ronbunshu*, **64**, 419-428 (2007) (in Japanese).

[Others]

Kanaya T, Matsuba G, Nishida K: Polymer Crystallization under Shear Flow—Formation Mechanism of Fiber Structure—, *Sen'i Gakkaishi*, **63**, 58-62 (2007) (in Japanese).

Matsuba G, Kanaya T, Nishida K: Small Angle X-ray Scattering for Structure Formation of Polymer under Shear Flow, *PF News*, **25**, 14-17 (2007) (in Japanese).

— Molecular Rheology —

Takada J, Sasaki H, Matsushima Y, Kuriyama A, Matsumiya Y, Inoue T, Watanabe H: Observation of Phase Separation with Rheological Measurement, *J. Soc. Rheol. Japan*, **35(4)**, 221-224 (2007).

Deme B, Watanabe H: Dielectric Behavior of an Aqueous System of Multi-wall Vesicles Formed with 1,2 dioleoyl-sn-glycero-3[phospho-L-serine] Sodium Salt, *J. Soc. Rheol. Japan*, **35(4)**, 207-211 (2007).

Takahashi H, Ishimuro Y, Watanabe H: Viscoelastic Behavior of Scarcely Crosslinked Poly(dimethyl siloxane) Gels: 2. Effects of Sol Component and Network Strand Length, *J. Soc. Rheol. Japan*, **35(4)**, 191-198 (2007).

Watanabe H, Matsumiya Y, Sawada T, Iwamoto T: Rheological and Dielectric Behavior of Dipole-Inverted (SIS)p-type Multi-block Copolymers: Estimates of Bridge/Loop Fractions for Respective I Blocks and Effect of Loops on High Extensibility of Bridges, *Macromolecules*, **40(19)**, 6885-6897 (2007).

Watanabe H, Matsumiya Y, Takada J, Sasaki H, Matsushima Y, Kuriyama A, Inoue T, Ahn K H, Yu W, Krishnamoorti R: Viscoelastic and Dielectric Behavior of a Polyisoprene/Poly(4-tert-butyl styrene) Miscible Blend, *Macromolecules*, **40(15)**, 5389-5399 (2007).

Matsumiya Y, Matsumoto M, Watanabe H, Kanaya T, Takahashi Y: Nonlinear Rheology and Structural Changes of (BS)_n Multi-block Copolymers under Shear Flow, *Macromolecules*, **40**, 3724-3732 (2007).

Matsumiya Y, Inoue T, Watanabe H, Kihara S, Ohshima M: Dielectric Behavior of cis-polyisoprene in Carbon Dioxide under High Pressure, *J. Soc. Rheol. Japan*, **35**, 155-161 (2007).

Arai N, Yasuoka K, Masubuchi Y: Spontaneous Self-assembly Process for Threadlike Micelles, *J. Chem. Phys.*, **126(24)**, 244905-244907 (2007).

Furuichi K, Nonomura C, Masubuchi Y, Ianniruberto G, Greco F, Marrucci G: Primitive Chain Network Simulations of Damping Functions for Shear, Uniaxial, Biaxial and Planar Deformations, *NIHON REOROJI GAKKAISHI*, **35(2)**, 73-77 (2007).

Hosono N, Furukawa H, Masubuchi Y, Watanabe T, Horie K: Photochemical Control of Network Structure in Gels and Photo-induced Changes in Their Viscoelastic Properties, *Colloid Surf. B-Biointerfaces*, **56(1-2)**, 285-289 (2007).

Li G Z, Matsuda T, Nishioka A, Liang K W, Masubuchi Y, Koyama K, Pittman C U: Rheological Properties of Poly(methyl methacrylate)/rigid Ladderlike Polyphenylsilsesquioxane Blends, *JOURNAL OF APPLIED POLYMER SCIENCE*, **104**, 352-359 (2007).

Oishi Y, Matsumiya Y, Watanabe H: Kinetics of Anionic Polymerization of Polubutadienyl Lithium in Benzene: An Osmotic Effect on the Propagation, *Polymer J*, **39(4)**, 304-317 (2007).

Matsuda Y, Nojima R, Sato T, Watanabe H: Reversed Micelle of Polybutadiene Living Anions in Cyclohexane, *Macromolecules*, **40(5)**, 1631-1637 (2007).

Sawada T, Qiao X, Watanabe H: Viscoelastic Relaxation of Linear Polyisoprenes: Examination of Constraint Release Mechanism, *J. Soc. Rheol. Japan*, **35(1)**, 11-20 (2007).

Hosono N, Masubuchi Y, Furukawa H, Watanabe T: A Molecular Dynamics Simulation Study on Polymer Networks of End-linked Flexible or Rigid Chains, *J. Chem. Phys.*, **127(16)**, 164905-164905(9) (2007).

— Molecular Aggregation Analysis —

Yoshida H, Inaba K, Sato N: X-ray Diffraction Reciprocal Space Mapping Study of the Thin Film Phase of Pentacene, *Appl. Phys. Lett.*, **90**, [181930-1]-[181930-3] (2007).

Katoh K, Sasamori T, Tokitoh N, Sato N: Synthesis of a Donor Molecule with Metal Coordination Sites toward Multifunctional Complexes, *Chem. Lett.*, **36**, 1122-1123 (2007).

Yoshida H, Sato N: Aluminum Diffusion and Reaction in Thin Films of Perylene-3,4,9,10-tetracarboxylic Dianhydride: Depth Profiles and Time-Dependent Diffusion Coefficients, *Appl. Phys. Lett.*, **91**, [141915-1]-[141915-3] (2007).

Okazaki T, Nagaoka Y, Asami K: Ion Channels of N-terminally-linked Alamethicin Dimers: Enhancement of Cation-Selectivity by Substitution of Glu for Gln at Position 7, *Bioelectrochemistry*, **70**, 380-386 (2007).

Katsumoto Y, Omori S, Yamamoto D, Yasuda A, Asami K: Dielectric Dispersion of Short Single-stranded DNA in Aqueous Solutions with and without Added Salt, *Phys. Rev. E*, **75**, [011911-1]-[011911-8] (2007).

Asami K, Sekine K: Dielectric Modelling of Cell Division for Budding and Fission Yeast, *J. Phys. D: Appl. Phys.*, **40**, 1128-1133 (2007).

Asami K, Sekine K: Dielectric Modelling of Erythrocyte Aggregation in Blood, *J. Phys. D: Appl. Phys.*, **40**, 2197-2204 (2007).

Sekine K, Hibino C, Kimura M, Asami K: Effects of T-tubes on Dielectric Spectra of Skeletal Muscle Simulated by Boundary Element Method with Two-dimensional Models, *Bioelectrochemistry*, **70**, 532-541 (2007).

Asami K: Dielectric Properties of Biological Tissues in Which Cells are Connected by Communicating Junctions, *J. Phys. D: Appl. Phys.*, **40**, 3718-3727 (2007).

Asami K: Dielectric Properties of Water in Triton X-100 (Non-ionic Detergent)-Water Mixtures, *J. Phys. Condens. Matter*, **19**, [376102-1]-[376102-10] (2007).

Futaki S, Asami K: Ligand-induced Extramembrane Conformation Switch Controlling Alamethicin Assembly and the Channel Current, *Chem. Biodiversity*, **4**, 1313-1322 (2007).

Bai W, Zhao K S, Asami K: Effects of Copper on Dielectric Properties of E. coli Cells, *Colloid. Surf. B: Biointerf.*, **58**, 105-115 (2007).

— Supramolecular Biology —

Saito K, Fujimura-Kamada K, Hanamatsu H, Kato U, Umeda M, Kozminski K G, Tanaka K: Transbilayer Phospholipid Flipping Regulates Cdc42 Signaling during Polarized Cell Growth via Rga GTPase-activating Proteins, *Dev Cell.*, **13**, 743-751 (2007).

Miki T, Umeda M, Harada Y: Asymmetric Distribution of Membrane Phospholipids between Bilayer Leaflets and Its Role in Cytokinesis, *J Biochem.*, **141**, 377-387 (2007).

Ikenouchi J, Umeda K, Tsukita S, Furuse M, Tsukita S: Requirement of ZO-1 for the Formation of Belt-like Adherens Junctions during Epithelial Cell Polarization, *J Cell Biol.*, **176**, 779-786 (2007).

[Others]

Umeda M: Looking at Lipids: Asymmetric Distribution of Membrane Phospholipids between Bilayer Leaflets and Its Role in Cytokinesis, *Microscopy*, **42(3)**, 206-210 (2007).

ADVANCED RESEARCH CENTER FOR BEAM SCIENCE — Particle Beam Science —

Shirai T, Ikegami M, Fujimoto S, Souda H, Tanabe M, Tongu H, Noda A, Noda K, Fujimoto T, Iwata S, Shibuya S, Smirnov A, Meshkov I, Fadil H, Grieser M: One Dimensional Beam Ordering of Protons in a Storage Ring, *Phys. Rev. Lett.*, **98**, [204801-1]-[204801-4] (2007).

Nakamura S, Ikegami M, Iwashita Y, Shirai T, Tongu H, Souda H, Daido H, Mori M, Kado M, Sagisaka A, Ogura K, Nishiuchi M, Orimo S, Hayashi Y, Yogo A, Pirozhkov A S, Bulanov S V, Esirkepov T, Nagashima A, Kimura T, Tajima T, Takeuchi T, Fukumi A, Li Z, Noda A: High-Quality Laser-Produced Proton Beam Realized by the Application of a Synchronous RF Electric Field, *Jpn. J. Appl. Phys.*, **46**, L717-L720 (2007).

Iwashita Y, Nakamura S, Yamada K, Ogata A, Wada Y, Hirota K: Possibility of a Small Neutron Source by Laser-Plasma Interaction, *Int. J. Mod. Phys. B*, **21**, 600-608 (2007).

Li Z, Daido H, Fukumi A, Bulanov S V, Sagisaka A, Ogura K, Yogo A, Nishiuchi M, Orimo S, Mori M, Oishi Y, Nayuki T, Fujii T, Nemoto K, Nakamura S, Noda A, Choi I W, Sung J H, Ko D-K, Lee J: Protons and Electrons Generated from a 5- μ m Thick Copper Tape Target Irradiated by s-, circularly-, and p-polarized 55-fs Laser Pulses, *Phys. Lett. A*, **369**, 483-487 (2007).

Nishiuchi M, Daido H, Sagisaka A, Ogura K, Orimo S, Kado M, Yogo A, Mori M, Hayashi Y, Bulanov S V, Fukumi A, Li Z, Noda A, Nakamura S: Repetitive Highly Collimated Intense Proton Beam with Sub-MeV Energy Range Driven by a Compact Few Terawatt Femtosecond Laser, *Appl. Phys. B*, **87**, 615-621 (2007).

Yogo A, Daido H, Fukumi A, Li Z, Ogura K, Sagisaka A, Pirozhkov A S, Nakamura S, Iwashita Y, Shirai T, Noda A, Oishi Y, Nayuki T, Fujii T, Nemoto K, Choi I W, Sung J H, Ko D-K, Lee J, Kaneda M, Itoh A: Laser Prepulse Dependency of Proton-energy Distributions in Ultraintense Laser-foil Interactions with an Online Time-of-flight Technique, *Phys. Plasmas*, **14**, [043104-1]-[043104-6] (2007).

Sagisaka A, Daido H, Ogura K, Orimo S, Hayashi Y, Mori M, Nishiuchi M, Yogo A, Kado M, Fukumi A, Li Z, Pirozhkov A S, Nakamura S, Iwashita Y, Shirai T, Noda A, Oishi Y, Nayuki T, Fujii T, Nemoto K: Characterization of an Intense Laser-Produced Preformed Plasma for Proton Generation, *J. Korean Phys. Soc.*, **51**, 442-446 (2007).

Orimo S, Nishiuchi M, Daido H, Yogo A, Ogura K, Sagisaka A, Li Z, Pirozhkov A, Mori M, Kiriya H, Kanazawa S, Kondo S, Yamamoto Y, Shimomura T, Tanoue M, Nakai Y, Akutsu A, Nakamura S, Shirai T, Iwashita Y, Noda A, Oishi Y, Nemoto K, Choi I W, Yu T J, Sung J H, Jeong T M, Kim H T, Hong K-H, Noh Y-C, Ko D-K, Lee J: Simultaneous Proton and X-ray Imaging with Femtosecond Intense Laser Driven Plasma Source, *Jpn. J. Appl. Phys.*, **46**, 5853-5858 (2007).

[Others]

Noda A, Shirai T, Souda H, Tanabe M, Tongu H, Ikegami M, Ishikawa T, Nakao M, Fadil H, Grieser M, Meshkov I N, Smirnov A, Noda K: Experimental Approach to Ultra-Cold Ion Beam at S-LSR, *Proc. of PAC07*, 2035-2037 (2007).

Noda A, Ikegami M, Ishikawa T, Nakao M, Shirai T, Souda H, Tanabe M, Tongu H, Meshkov I N, Smirnov A V, Grieser M, Noda K: Present Status and Recent Activity on Laser Cooling at S-LSR, *Proc. of COOL2007*, 204-208 (2007).

Shirai T, Fujimoto S, Ikegami M, Tongu H, Tanabe M, Souda H, Noda A, Noda K, Fujimoto T, Iwata S, Shibuya S, Syresin E, Smirnov A, Meshkov I, Fadil H, Grieser M: Electron Cooling Experiment at S-LSR, *Proc. of COOL2007*, 135-139 (2007).

Noda A, Ikegami M, Fujimoto S, Shirai T, Souda H, Tanabe M, Tongu H, Okamoto H, Noda K, Meshkov I, Smirnov A: Experimental Strategy for Realization of 3-D Beam Ordering with Use of Tapered Cooling at S-LSR, *Proc. of HB2006*, 231-235 (2007).

Shirai T, Fujimoto S, Ikegami M, Noda A, Tongu H, Tanabe M, Souda H, Noda K, Fujimoto T, Fujiwara H, Iwata S, Takubo A, Takeuchi T, Shibuya S, Syresin E, Seleznev I, Smirnov A, Meshkov I, Fadil H: Commissioning of Electron Beam Cooling at S-LSR, *Proc. of HB2006*, 247-249 (2007).

Noda A, Itoh H, Iwashita Y, Nakamura S, Shirai T, Souda H, Tanabe M, Tongu H, Yamazaki A, Daido H, Hayashi Y, Kado M, Mori M, Nishiuchi M, Ogura K, Orimo S, Sagisaka A, Yogo A, Bulanov S, Kimura T, Nagashima A, Tajima T, Fukumi A, Li Z, Yamada S: Creation of Peaks in the Energy Spectrum of Laser-Produced Ions by Phase Rotation, *Proc. of LINAC2006*, 97-99 (2006).

Iwashita Y, Fujisawa H, Ichikawa M, Tajima Y: Reduction of RF Skin Loss with Thin Foils, *Proc. of PAC07*, 2134-2136 (2007).

Iwashita Y, Ichikawa M, Tajima Y, Fujisawa H, Kuroda S, Okugi T, Tauchi T, Kumada M, Spencer C M: Modification and Measurement of the Adjustable Permanent Magnet Quadrupole for the Final Focus in a Linear Collider, *Proc. of PAC07*, 2719-2721 (2007).

Iwashita Y: Mitigation of Power Loss Due to Skin Effect by Thin-Layered Film, *Proc. of LINAC2006*, 785-787 (2006).

Noda A, Ikegami M, Ishikawa T, Nakao M, Fujimoto S, Shirai T, Souda H, Tanabe M, Tongu H, Noda K, Yamada S, Shibuya S, Fujimoto T, Iwata S, Takubo A, Fujiwara H, Takeuchi T, Nakamura T, Meshkov I, Smirnov A, Selznev I, Syresin E, Fadil H, Grieser M: Present Status of Ion Storage and Cooler Ring, S-LSR, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 7-9 (2007).

Iwashita Y, Tajima Y, Ichikawa M, Tongu H, Fujisawa H: Mitigation of Power Loss Due to Skin Effect-III, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 79-81 (2007) (in Japanese).

Shirai T, Tanabe M, Souda H, Ikegami M, Tongu H, Noda A, Noda K, Grieser M, Meshkov I N, Smirnov A V: Ordering Transition of the Electron Cooled Proton Beam, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 115-117 (2007) (in Japanese).

Ikegami M, Nakamura S, Iwashita Y, Shirai T, Souda H, Tajima Y, Tanabe M, Tongu H, Itoh H, Shintaku H, Yamazaki A, Daido H, Yogo A, Nishiuchi M, Mori M, Kiriya H, Kanazawa S, Sagisaka A, Ogura K, Orimo S, Kondo S, Yamamoto Y, Shimomura T, Tanoue M, Nakai Y, Akutsu A, Bulanov S V, Kimura T, Oishi Y, Nemoto K, Tajima T, Noda A: Energy Compression and Radial Focusing of Laser Produced Proton Beam by Synchronous rf Field, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 157-159 (2007) (in Japanese).

Tanabe M, Souda H, Ishikawa T, Nakao M, Noda A, Shirai T, Tongu H, Ikegami M: Laser Cooling of Mg⁺ Beam at S-LSR, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 118-120 (2007) (in Japanese).

Ishikawa T, Tanabe M, Souda H, Ikegami M, Tongu H, Shirai T, Noda A: Optical Beam Monitors in S-LSR, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 321-333 (2007) (in Japanese).

Tongu H, Ikegami M, Noda A, Shirai T, Souda H, Tanabe M: Measurement of Beam Lifetime in S-LSR, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 324-326 (2007) (in Japanese).

Souda H, Tanabe M, Ishikawa T, Nakao M, Ikegami M, Tongu H, Shirai T, Noda A: Beam Optimization for Laser Cooling at S-LSR, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 327-329 (2007) (in Japanese).

Ichikawa M, Iwashita Y, Tajima Y, Tongu H, Fujisawa H: Development of Piezoelectric Pulse Gas Valve, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 103-105 (2007) (in Japanese).

Tajima Y, Iwashita Y, Ichikawa M, Hayano H: Development of Inspection System of SCAF Cavity for ILC, *Proc. of the 4th Annual Meeting of Particle Accelerator Society of Japan*, 460-462 (2007) (in Japanese).

— Laser Matter Interaction Science —

Hashida M, Shimizu S, Sakabe S: Carbon Nanotubes Cathode Modified by Femtosecond Laser Ablation, *J. Phys.: Conf. Ser.*, **58**, 487-491 (2007).

Tokita S, Kawanaka J, Izawa Y, Fujita Y, Kawashima T: 23.7-W Picosecond Cryogenic-Yb:YAG Multipass Amplifier, *Optics Express*, **15**, 3955-3961 (2007).

Ogawa K, Akahane Y, Aoyama M, Tsuji K, Tokita S, Kawanaka J, Nishioka H, Yamakawa K: Multi-millijoule, Diode-pumped, Cryogenically-cooled Yb:KY(WO₄)₂ Chirped-pulse Regenerative Amplifier, *Optics Express*, **15**, 8598-8602 (2007).

Akahane Y, Aoyama M, Ogawa K, Tsuji K, Tokita S, Kawanaka J, Nishioka H, Yamakawa K: High-energy, Diode-pumped, Picosecond Yb:YAG Chirped-pulse Regenerative Amplifier for Pumping Optical Parametric Chirped-pulse Amplification, *Optics Letters*, **32**, 1899-1901 (2007).

Yasuhara R, Tokita S, Kawanaka J, Kawashima T, Kan H, Yagi H, Nozawa H, Yanagitani T, Fujimoto Y, Yoshida H, Nakatsuka M: Cryogenic Temperature Characteristics of Verdet Constant on Terbium Gallium Garnet Ceramics, *Optics Express*, **15**, 11255-11261 (2007).

Tsukamoto M, Abe N, Kayahara T, Asuka K, Hashida M, Nakano H, Fujita M, Katto M: Microstructures Formation on Titanium Plate by Femtosecond Laser Ablation, *J. Phys.: Conf. Ser.*, **58**, 666-669 (2007).

Matsumoto S, Yane A, Nakashima S, Hashida M, Fujita M, Goto Y, Takahashi S: A Rapid Flow Mixer with 11-μs Mixing Time Microfabricated by a Pulsed Laser Ablation Technique: Observation of a Barrier-limited Collapse in Cytochrome c Folding, *J. Am. Chem. Soc.*, **129**, 3840-3841 (2007).

Izawa Yu, Izawa Y, Setsuhara Y, Hashida M, Fujita M, Sasaki R, Nagai H, Yoshida M: Ultrathin Amorphous Si Formation by Femtosecond Laser Pulse Irradiation, *Appl. Phys. Lett.*, **90**, 44107 (2007).

— Electron Microscopy and Crystal Chemistry —

Masuno A, Haruta M, Azuma M, Kurata H, Isoda S, Takano M, Shimakawa Y: Epitaxial Growth and B-site Cation Ordering in Layered Double Perovskite $\text{La}_2\text{CuSnO}_6$ Thin Films, *Appl. Phys. Lett.*, **89**, [211913-1]-[211913-3] (2006).

Wang F, Jiu J, Pei L, Nakagawa K, Isoda S, Adachi M: Effect of Nitrate Ion on Formation of TiO_2 Nanoplates Structure in Hydrothermal Solution, *Mater. Lett.*, **61**, 488-490 (2007).

Yoshida K, Minamikawa H, Kamiya S, Shimizu T, Isoda S: Formation of Self-Assembled Glycolipid Nanotubes with Bilayer Sheets, *J. Nanosci. Nanotechnol.*, **7**, 960-964 (2007).

Hosomizu K, Imahori H, Hahn U, Nierengarten J-F, Listorti A, Armaroli N, Nemoto T, Isoda S: Dendritic Effects on Structure and Photophysical and Photoelectrochemical Properties of Fullerene Dendrimers and Their Nanoclusters, *J. Phys. Chem. C*, **111**, 2777-2786 (2007).

Yaji T, Yoshida K, Tsujimoto M, Nemoto T, Kurata H, Isoda S: STM and STS Studies on Platinum Chains in Bis(1,2-benzoquinonedioximato)platinum., *Mol. Cryst. Liq. Cryst.*, **463**, 575-582 (2007).

Franco O, Nemoto T, Yaji T, Isoda S: Regularly-shaped Diacetylene Nano-structures on Surfaces, *Mol. Cryst. Liq. Cryst.*, **464**, 73-81 (2007).

Koshino M, Kurata H, Isoda S: Stability of Peripheral Halogenation among Phthalocyanine Complexes, *Microsc Microanal.*, **13**, 96-107 (2007).

Jiu J, Isoda S, Adachi M, Wang H: Dye-sensitized Solar Cell Based on TiO_2 Nanocrystalline with 3~5 nm in Diameter, *J. Mater. Sci.*, **18**, 593-597 (2007).

Jiu J, Isoda S, Adachi M: Preparation of TiO_2 Nanocrystalline with 3~5 nm and Application for Dye-sensitized Solar Cell, *J. Photochem. Photobiol. A*, **189**, 314-321 (2007).

Sasase M, Okayasu S, Yamamoto H, Kurata H, Hojou K: Structure of Beam Tracks Induced by Swift Heavy Ions in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$ Superconductors, *Jpn. J. Appl. Phys.*, **46**, 783-786 (2007).

Minari T, Miyadera T, Tsukagoshi K, Aoyagi Y, Hamano T, Nemoto T, Isoda S, Yasuda R, Nomoto K: Scaling Effect on Operation Stability of Short-channel Organic Single-crystal Transistors, *Appl. Phys. Lett.*, **91**, [063506-1]-[063506-3] (2007).

Lee Y-C, Chueh Y-L, Hsieh C-H, Chang M-T, Chou L-J, Wang Z L, Lan Y-W, Chen C-D, Kurata H, Isoda S: P-type $\alpha\text{-Fe}_2\text{O}_3$ Nanowire and Its N-type Transition at Reductive Ambient, *Small*, **3**, 1356-1361 (2007).

Miyata Y, Minari T, Nemoto T, Isoda S, Komatsu K: Synthesis of Fluorinated Anti-fluorenone and the Structural, Electronic, and Field-effect Properties, *Org. Biomol. Chem.*, **5**, 2592-2598 (2007).

Umeyama T, Tezuka N, Fujita T, Matano Y, Takeda N, Murakoshi K, Yoshida K, Isoda S, Imahori H: Retention of Intrinsic Electronic Properties of Soluble Single-Walled Carbon Nanotubes after a Significant Degree of Sidewall Functionalization by the Bingel Reaction, *J. Phys. Chem. C*, **111**, 9734-9741 (2007).

Kawasaki J, Satou D, Takagaki T, Nemoto T, Kawaguchi A: Structural Features of Inclusion Complexes of γ -cyclodextrin with Various Polymers, *Polymer*, **48**, 1127-1138 (2007).

Minari T, Seto M, Nemoto T, Isoda S, Tsukagoshi K, Aoyagi Y: Molecular-packing-enhanced Charge Transport in Organic Field-effect Transistors of Semiconducting Porphyrin Crystals, *Appl. Phys. Lett.*, **91**, [123501-1]-[123501-3] (2007).

Kimura Y, Takata H, Terazima M, Ogawa T, Isoda S: Synthesis of Gold Nanoparticles by the Laser Ablation in Room Temperature Ionic Liquids, *Chem. Lett.*, **36**, 1130-1131 (2007).

Umeyama T, Fujita T, Tezuka N, Kadota N, Matano Y, Yoshida K, Isoda S, Imahori H: Electrophoretic Deposition of Single-walled Carbon Nanotubes Covalently Modified with Bulky Porphyrins on Nanostructured SnO_2 Electrodes for Photoelectrochemical Devices, *J. Phys. Chem. C*, **111**, 11484-11493 (2007).

Adachi M, Jiu J, Isoda S: Synthesis of Morphology Controlled Titania Nanocrystals and Application for Dye-Sensitized Solar Cells, *Current Nanosci.*, **3**, 285-295 (2007).

Schaper A, Kurata H, Yoshioka T, Tsuji M: Composite Structure of Liquid Crystal/Polymer Nanotubes Revealed by High-Angle Annular Dark-Field Scanning Transmission Electron Microscopy, *Microsc Microanal.*, **13**, 336-341 (2007).

Nakanishi T, Michinobu T, Yoshida K, Teranishi T, Takahashi H, Ariga K: Flower-Shaped Supramolecular Assemblies: Hierarchical Organization of a Fullerene Bearing Long Aliphatic Chains, *Small*, **3**, 2019-2023 (2007).

Yoshida K, Isoda S: Control of Crystal Structure and Orientation of Ni(salen) by Epitaxial Growth on Alkali Halide, *Chem. Mater.*, **19**, 6174-6179 (2007).

[Others]

Yoshimoto N, Itabashi T, Jiu J, Isoda S, Adachi M: Present Situation and Problems of Organic Solar Cells, *Ekisho*, **10**, 352-358 (2006) (in Japanese).

Kurata H, Isoda S: Determination of Molecular Orientation by Angular Distribution of Non-elastic Scattering Intensity, *Materia*, **45**, 866 (2006) (in Japanese).

— Structural Molecular Biology —

Fujii T, Oikawa T, Muraoka I, Soda K, Hata Y: Crystallization and Preliminary X-ray Diffraction Studies of Tetrameric Malate Dehydrogenase from the Novel Antarctic Psychrophile *Flavobacterium frigidimaris* KUC-1, *Acta Cryst.*, **F63**, 983-986 (2007).

Yamaoka H, Tsujii N, Yamamoto K, Ohashi H, Vlaicu A M, Kunitani K, Uotani K, Horiguchi D, Tochio T, Ito Y, Shin S: Direct Observation of Valence Transition in $\text{CeNi}_{1-x}\text{Co}_x\text{Sn}$ Alloys by X-ray and Photoelectron Spectroscopies, *Physical Review B*, **76**, [71530-1]-[71530-8] (2007).

Oohashi H, Ito Y, Tochio T, Vlaicu A M, Yoshikawa H, Fukushima S: Satellites Hidden by Diagram Lines in Heavy Elements Ir, Pt, Au, *Physica Scripta*, **75**, 323-326 (2007).

Oohashi H, Vlaicu A M, Horiguchi D, Yokoi K, Mizota H, Sakakura S, Ito Y, Tochio T, Yoshikawa H, Fukushima S, Shoji T: High-resolution Anti-parallel Double-crystal Spectrometer at BL15XU in Spring-8, *American Institute of Physics*, **879**, 1775-1778 (2007).

Mizota H, Ito Y, Tochio T, Handa K, Takekawa S, Kitamura K: Li K-edge Xanes Spectra of Lithium Niobate and Lithium Tantalate, *American Institute of Physics*, **882**, 508-510 (2007).

Yamamoto K, Yamaoka H, Tsujii N, Vlaicu A M, Oohashi H, Sakakura S, Tochio T, Ito Y, Chinani A, Shin S: Intermediate-valence Behavior of $\text{YbCu}_{5-x}\text{Al}_x$ around Quantum Critical Point Measured by Resonant Inelastic X-ray Scattering at Yb L_3 Absorption Edge, *J. Phys. Soc. Jpn*, **76**, [124705-1]-[124705-7] (2007).

[Others]

Hata Y, Fujii T, Oikawa T, Soda K: Structural Features of Psychrophilic Malate Dehydrogenase Adapting to the Extreme Environment, *The 8th Conference of the Asian Crystallographic Association Taipei, Taiwan*, 389 (2007).

Nakanishi Y, Ide J, Kondo J, Fukao S, Handa K, Tochio T, Ito Y, Tanaka A, Yoshikado S: Ozone Gas Generator Using Uniaxially Polarized LiTaO_3 Single Crystal, *MRS Fall Meeting*, K10.62 (2007).

Fukao S, Nakanishi Y, Mizoguchi T, Ito Y, Nakamura T, Yoshikado S: Radiation of X-rays Using Uniaxially Polarized LiNbO_3 Single Crystal, *MRS Fall Meeting*, K11.11 (2007).

INTERNATIONAL RESEARCH CENTER FOR ELEMENTS SCIENCE

— Organic Main Group Chemistry —

Hatakeyama T, Nakamura M: Iron-Catalyzed Selective Biaryl Coupling: Remarkable Suppression of Homocoupling by the Fluoride Anion, *J. Am. Chem. Soc.*, **129**, 9844-9845 (2007).

Endo K, Hatakeyama T, Nakamura M, Nakamura E: Indium-Catalyzed 2-Alkenylation of 1,3-Dicarbonyl Compounds with Unactivated Alkynes, *J. Am. Chem. Soc.*, **129**, 5264-5271 (2007).

Hatakeyama T, Ito S, Yamane H, Nakamura M, Nakamura E: Regioselective α -Alkylation of Ketones with Alkyl Chlorides and Fluorides via Highly Nucleophilic Magnesium Enamides, *Tetrahedron*, **63**, 8440-8448 (2007).

Tsuiji H, Yamagata K-I, Itoh Y, Endo K, Nakamura M, Nakamura E: Indium-Catalyzed Cycloisomerization of ω -Alkynyl- β -ketoesters into Six- to Fifteen-Membered Rings, *Angew. Chem. Int. Ed.*, **46**, 8060-8062 (2007).

Ito S: Carbon-Carbon Bond-Forming Reactions by Direct Use of Simple Alcohols, *Journal of Synthetic Organic Chemistry, Japan*, **65**, 618 (2007) (in Japanese).

[Others]

Itoh S, Nakamura M: Catalytic Cross-Coupling Reactions Based on Ununiversal Metal, *Organometallic News*, **3**, 88-93 (2007) (in Japanese).

Nakamura M: Development of Synthetic Organic Reactions with the Help of Molecular Modelling, *WAKO Organic Square*, **19**, 2-7 (2007) (in Japanese).

Nakamura M: Development of Selective C-C Bond Formation Reactions by Using Iron-Catalyst, *Chemistry and Chemical Industry*, **60(11)**, 1084-1087 (2007) (in Japanese).

Nakamura M: Controlled Organic Synthesis Utilizing Universal Metals, *Kagaku*, **62(12)**, 34-38 (2007) (in Japanese).

— Advanced Solid State Chemistry —

Oka K, Azuma M, Narumi Y, Kindo K, Hayashi N, Shimakawa Y, Takano M: Synthesis and Physical Property of Triangular Lattice Antiferromagnet InFe_2O_4 , *Funtai oyobi Funmatsu Yakin*, **54**, 53-57 (2007) (in Japanese).

Kawai M, Saito T, Hayashi N, Azuma M, Takano M, Shimakawa Y: Synthesis of Layered Compounds $A\text{Fe}_{6-x}\text{Mn}_x\text{O}_{11}$ ($A=\text{Ba}, \text{Sr}$) by High-Pressure Technique, *Funtai oyobi Funmatsu Yakin*, **54**, 58-63 (2007) (in Japanese).

Azuma M, Kanda H, Belik A A, Shimakawa Y, Takano M: Magnetic and Structural Properties of $\text{BiFe}_{1-x}\text{Mn}_x\text{O}_3$, *J. Mag. Mag. Mat.*, **310**, 1177-1179 (2007).

Oba N, Kageyama H, Saito T, Azuma M, Paulus W, Kitano T, Ajiro Y, Yoshimura K: Synchrotron X-Ray Diffraction Study on the Square-Lattice Antiferromagnets $(\text{CuCl})\text{LaNb}_2\text{O}_7$ and $(\text{FeCl})\text{LaNb}_2\text{O}_7$, *J. Mag. Mag. Mat.*, **310**, 1337-1339 (2007).

Saito T, Williams A, Attfield J P, Wuernisha T, Kamiyama T, Ishiwata S, Takeda Y, Shimakawa Y, Takano M: Neutron Diffraction Study of a Layered Cobalt Oxide $\text{SrCo}_6\text{O}_{11}$, *J. Mag. Mag. Mat.*, **310**, 1584-1586 (2007).

Kohsaka Y, Taylor C, Fujita K, Schmidt A, Lupien C, Hanaguri T, Azuma M, Takano M, Eisaki E, Takagi H, Uchida S, Davis J C: An Intrinsic Bond-Centered Electronic Glass with Unidirectional Domains in Underdoped Cuprates, *Science*, **315**, 1380-1385 (2007).

Sakai M, Masuno A, Kan D, Hashisaka M, Takata K, Azuma M, Takano M, Shimakawa Y: Multiferroic Thin Film of $\text{Bi}_2\text{NiMnO}_6$ with Ordered Double-Perovskite Structure, *Appl. Phys. Lett.*, **90**, [072903-1]-[072903-3] (2007).

Ishiwata S, Azuma M, Takano M: Structure and Physical Properties of Perovskite $\text{Bi}_{0.8}\text{Pb}_{0.2}\text{NiO}_3$ in Unusual Valence State $A^{4+}B^{2+}\text{O}_3$, *Chem. Mater.*, **19**, 1964-1967 (2007).

Smadici S, Abbamonte P, Taguchi M, Kohsaka Y, Sasagawa T, Azuma M, Takano M, Takagi H: Absence of Long-Ranged Charge Order in $\text{Na}_x\text{Ca}_{2-x}\text{CuO}_2\text{Cl}_2$ ($x=0.08$), *Phys. Rev. B*, **75**, [075104-1]-[075104-4] (2007).

Shen K M, Ronning F, Meevasana W, Lu D H, Ingle N J C, Baumberger F, Lee W S, Miller L L, Kohsaka Y, Azuma M, Takano M, Takagi H, Shen Z-X: Angle-Resolved Photoemission Studies of Lattice Polaron Formation in the Cuprate $\text{Ca}_2\text{CuO}_2\text{Cl}_2$, *Phys. Rev. B*, **75**, [075115-1]-[075115-5] (2007).

Hashisaka M, Kan D, Masuno A, Terashima T, Takano M, Mibu K: Spin-Filtering Effect of Ferromagnetic Semiconductor $\text{La}_2\text{NiMnO}_6$, *J. Mag. Mag. Mat.*, **310**, 1975-1977 (2007).

Ishiwata S, Terasaki I, Ishii F, Nagaosa N, Mukuda H, Kitaoka Y, Saito T, Takano M: Two-Staged Magnetoresistance Driven by the Ising-Like Spin Sublattice in $\text{SrCo}_6\text{O}_{11}$, *Phys. Rev. Lett.*, **98**, [217201-1]-[217201-4] (2007).

Tsujimoto Y, Baba Y, Oba N, Kageyama H, Fukui T, Narumi Y, Kindo K, Saito T, Takano M, Ajiro Y, Yoshimura K: $1/3$ Magnetization Plateau in Spin- $1/2$ Square Lattice Antiferromagnet $(\text{CuBr})\text{Sr}_2\text{Nb}_3\text{O}_{10}$, *J. Phys. Soc. Jpn.*, **76**, [063711-1]-[063711-4] (2007).

Yamada I, Azuma M, Shimakawa Y, Takano M: Single Crystal Growth of A -Site Deficient Superconductor $\text{Ca}_{2-x}\text{CuO}_2\text{Cl}_2$, *Physica C*, **460-462**, 420-421 (2007).

Kan D, Sakata O, Kimura S, Takano M, Shimakawa Y: Structural Characterization of Ar^+ -Irradiated SrTiO_3 Showing Room-Temperature Blue Luminescence, *Jpn. J. Appl. Phys.*, **46**, L471-L473 (2007).

Takata K, Yamada I, Azuma M, Takano M, Shimakawa Y: Magnetoresistance and Electronic Structure of the Half-Metallic Ferromagnet $\text{BiCu}_3\text{Mn}_4\text{O}_{12}$, *Phys. Rev. B*, **76**, [024429-1]-[024429-4] (2007).

Shiraki H, Saito T, Yamada T, Tsujimoto M, Azuma M, Kurata H, Isoda S, Takano M, Shimakawa Y: Ferromagnetic Cuprates $\text{CaCu}_3\text{Ge}_4\text{O}_{12}$ and $\text{CaCu}_3\text{Sn}_4\text{O}_{12}$ with A -Site Ordered Perovskite Structure, *Phys. Rev. B*, **76**, [140403-1]-[140403-4] (2007).

Zhang W-M, Okubo S, Ohta H, Saito T, Takano M: High-Frequency ESR Measurements of the Co Spinel Compound SiCo_2O_4 , *J. Phys.: Condens. Matter*, **19**, [145264-1]-[145264-6] (2007).

— Organotransition Metal Chemistry —

Katayama H, Ozawa F: Stereocontrolled Synthesis of π -Conjugated Macromolecules, *Koubunshi*, **56**, 216-220 (2007) (in Japanese).

Ikegami M, Nagao M, Katayama H, Ozawa F, Arai T: Photoisomerization Mechanism of All-Z-Oligo(phenylenevinylene)s, *Bull. Chem. Soc. Jpn.*, **80**, 1833-1835 (2007).

Hayashi A, Okazaki M, Ozawa F, Tanaka R: Synthesis, Structures, and Catalytic Properties of Late-Transition-Metal 2,6-Bis(2-phosphaethenyl)pyridine Complexes, *Organometallics*, **26**, 5246-5249 (2007).

Hayashi A, Ishiyama T, Okazaki M, Ozawa F: Cationic Iridium(III) Complexes Bearing Phosphaalkene and 2-Pyridylphenyl Ligands, *Organometallics*, **26**, 3708-3712 (2007).

Lai R-Y, Surekha K, Hayashi A, Ozawa F, Liu Y-H, Peng S-M, Liu S-T: Intra- and Intermolecular Hydroamination of Alkynes Catalyzed by Ortho-Metalated Iridium Complexes, *Organometallics*, **26**, 1062-1068 (2007).

Jensen R S, Umeda K, Okazaki M, Ozawa F, Yoshifuji M: Synthesis and Catalytic Properties of Cationic Palladium(II) and Rhodium(I) Complexes Bearing Diphosphinidenecyclobutene Ligands, *J. Organomet. Chem.*, **692**, 286-294 (2007).

Okazaki M, Kimura H, Komuro T, Okada H, Tobita H: Synthesis, Structure, and Properties of Three- and Six-Membered Metallacycles Composed of Iron, Germanium, and Sulfur Atoms, *Chem. Lett.*, **36**, 990-991 (2007).

Suzuki E, Komuro T, Okazaki M, Tobita H: Three- and Five-Membered W/C/N Metallacycles Formed by Incorporation of Acetonitrile Molecules into Silylungsten Intermediates, *Organometallics*, **26**, 4379-4382 (2007).

Minglana J J G, Okazaki M, Hasegawa K, Luh L-S, Yamahira N, Komuro T, Ogino H, Tobita H: Iron, Ruthenium, and Osmium Complexes Supported by the Bis(silyl) Chelate Ligand (9,9-dimethylxanthene-4,5-diyl)bis(dimethylsilyl): Synthesis, Characterization, and Reactivity, *Organometallics*, **26**, 5859-5866 (2007).

Harada S, Takita R, Ohshima T, Matsunaga S, Shibasaki M: Ligand Accelerated Indium(III)-Catalyzed Asymmetric Alkynylation of Aldehydes with 2-Methyl-3-butyn-2-ol as an Ethyne Equivalent Donor, *Chem. Commun.*, 948-950 (2007).

— Photonic Elements Science —

Ito Y, Matsuda K, Kanemitsu Y: Mechanism of Photoluminescence Enhancement in Single Semiconductor Nanocrystals on Metal Surfaces, *Phys. Rev. B*, **75**, [033309-1]-[033309-4] (2007).

Matsuda K, Nair S V, Ruda H E, Sugimoto Y, Saiki T, Yamaguchi K: Two-exciton State in GaSb/GaAs Type II Quantum Dots Studied Using Near-field Photoluminescence Spectroscopy, *Appl. Phys. Lett.*, **90**, [013101-1]-[013101-4] (2007).

Ohno Y, Shirahama T, Takeda S, Ishizumi A, Kanemitsu Y: Mechanism of the Growth of ZnSe Nanowires with Fe Catalysts, *Solid State Commun.*, **141**, 228-232 (2007).

Kubota R, Nakashima K, Mizuno D, Saiki T, Sakai M, Matsuda K, Ishizuka T: Near-infrared Near-field Photoluminescence Imaging Spectroscopy of Exciton Localized States in GaInNAs/GaAs Quantum Wells Due to Nonuniform Distribution of Nitrogen, *J. of Nanophoto.*, **1**, [011592-1]-[011592-6] (2007).

McNamee C E, Yamamoto S, Higashitani K: Preparation and Characterisation of Pure and Mixed Monolayers of Poly(ethylene glycol) Brushes Chemically Adsorbed to Silica Surfaces, *Langmuir*, **23**, 4389-4399 (2007).

McNamee C E, Yamamoto S, Higashitani K: Effect of the Physicochemical Properties of Poly(ethylene glycol) Brushes on Their Binding to Cells, *Biophys. Journal*, **93**, 324-334 (2007).

Tamada Y, Yamamoto S, Nasu S, Takano M, Ono T: Well-Ordered L_{10} -FePt Nanoparticles Synthesized by Improved SiO_2 -Nanoreactor Method, *Appl. Phys. Lett.*, **90**, [162509-1]-[162509-4] (2007).

Tamada Y, Yamamoto S, Nasu S, Takano M, Ono T: Effects of Annealing Time on Structural and Magnetic Properties of L_{10} -FePt Nanoparticles Synthesized by the SiO_2 -Nanoreactor Method, *J. of Magnetism and Magnetic Materials*, **310**, 2381-2383 (2007).

BIOINFORMATICS CENTER

— Bioknowledge Systems —

Sugita C, Ogata K, Shikata M, Jikuya H, Takano J, Furumichi M, Kanehisa M, Omata T, Suiura M, Sugita M: Complete Nucleotide Sequence of the Freshwater Unicellular Cyanobacterium *Synechococcus elongatus* PCC 6301 Chromosome: Gene Content and Organization, *Photosynth. Res.*, **93**, 55-67 (2007).

Okuda S, Kawashima S, Kobayashi K, Ogasawara N, Kanehisa M, Goto S: Characterization of Relationships between Transcriptional Units and Operon Structures in *Bacillus subtilis* and *Escherichia coli*, *BMC Genomics*, **8**, [48-1]-[48-12] (2007).

Gutteridge A, Kanehisa M, Goto S: Regulation of Metabolic Networks by Small Molecule Metabolites, *BMC Bioinformatics*, **8**, [88-1]-[88-17] (2007).

Okamoto S, Yamanishi Y, Ehira S, Kawashima S, Tonomura K, Kanehisa M: Prediction of Nitrogen Metabolism-related Genes in *Anabaena* by Kernel-based Network Analysis, *Proteomics*, **7**, 900-909 (2007).

Yamanishi Y, Mihara H, Osaki M, Muramatsu H, Esaki N, Sato T, Hizukuri Y, Goto S, Kanehisa M: Prediction of Missing Enzyme Genes in Bacterial Metabolic Network: a Reconstruction of Lysine Degradation Pathway of *Pseudomonas aeruginosa*, *FEBS J.*, **274**, 2262-2273 (2007).

Minowa Y, Araki M, Kanehisa M: Comprehensive Analysis of Distinctive Polyketide and Nonribosomal Peptide Structural Motifs Encoded in Microbial Genomes, *J. Mol. Biol.*, **368**, 1500-1517 (2007).

Masoudi-Nejad A, Goto S, Jauregui R, Ito M, Kawashima S, Moriya Y, Endo T R, Kanehisa M: EGENES: Transcriptome-based Plant Database of Genes with Metabolic Pathway Information and EST Indices in KEGG, *Plant Physiol.*, **144**, 857-866 (2007).

Hu Z, Mellor J, Wu J, Kanehisa M, Stuart J M, DeLisi C: Toward Scalable Multidimensional Maps of the Cell, *Nat. Biotech.*, **25**, 547-554 (2007).

Oh M, Yamada T, Hattori M, Goto S, Kanehisa M: Systematic Analysis of Enzyme-catalyzed Reaction Patterns and Prediction of Microbial Biodegradation Pathways, *J. Chem. Inf. Model.*, **47**, 1702-1712 (2007).

Moriya Y, Itoh M, Okuda S, Yoshizawa A, Kanehisa M: KAAS: an Automatic Genome Annotation and Pathway Reconstruction Server, *Nucleic Acids Res.*, **35**, W182-W185 (2007).

Hu Z, Ng D M, Yamada T, Chen C, Kawashima S, Mellor J, Linghu B, Kanehisa M, Stuart J M, Delisi C: VisANT 3.0: New Modules for Pathway Visualization, Editing, Prediction and Construction, *Nucleic Acids Res.*, **35**, W625-W632 (2007).

Limviphuvadh V, Tanaka S, Goto S, Ueda K, Kanehisa M: The Commonality of Protein Interaction Networks Determined in Neurodegenerative Disorders (NDDs), *Bioinformatics*, **23**, 2129-2138 (2007).

Schwartz J-M, Gauguier C, Nacher J C, de Daruvar A, Kanehisa M: Observing Metabolic Functions at the Genome Scale, *Genome Biol.*, **8**, [R123-1]-[R123-17] (2007).

Fujita M, Mihara H, Goto S, Esaki N, Kanehisa M: Mining Prokaryotic Genomes for Unknown Amino Acids: a Stop-codon-based Approach, *BMC Bioinformatics*, **8**, [225-1]-[225-11] (2007).

Aoki-Kinoshita K F, Kanehisa M: Gene Annotation and Pathway Mapping in KEGG, In "Comparative Genomics Volume 2" (Bergman, N. H., ed.), *Methods Mol. Biol.*, **396**, 71-92 (2007).

— Biological Information Networks —

Tamura T, Akutsu T: Subcellular Location Prediction of Proteins Using Support Vector Machines with Alignment of Block Sequences Utilizing Amino Acid Composition, *BMC Bioinformatics*, **8**, 466 (2007).

Takemoto K, Nacher J C, Akutsu T: Correlation between Structure and Temperature in Prokaryotic Metabolic Networks, *BMC Bioinformatics*, **8**, [303-1]-[303-11] (2007).

Nacher J C, Akutsu T: Recent Progress on the Analysis of Power-law Features in Complex Cellular Networks, *Cell Biochemistry and Biophysics*, **49**, 37-47 (2007).

Ochiai T, Nacher J C, Akutsu T: Emergence of the Self-similar Property in Gene Expression Dynamics, *Physica A*, **382**, 739-752 (2007).

Ching W-K, Zhang S-Q, Ng M K, Akutsu T: Approximation Method for Solving the Steady-state Probability Distribution of Probabilistic Boolean Networks, *Bioinformatics*, **23**, 1511-1518 (2007).

Takemoto K, Oosawa C, Akutsu T: Structure of n-Clique Networks Embedded in a Complex Network, *Physica A*, **380**, 665-672 (2007).

Zhang S-Q, Hayashida M, Akutsu T, Ching W-K, Ng M K: Algorithms for Finding Small Attractors in Boolean Networks, *EURASIP Journal on Bioinformatics and Systems Biology*, **2007**, [20180-1]-[20180-13] (2007).

Tamura T, Akutsu T: Approximation Algorithms for Optimal RNA Secondary Structures Common to Multiple Sequences, *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, **E90-A**, 917-923 (2007).

Akutsu T, Bannai H, Miyano S, Ott S: On the Complexity of Deriving Position Specific Score Matrices from Positive and Negative Sequences, *Discrete Applied Mathematics*, **155**, 676-685 (2007).

Akutsu T, Arimura H, Shimozone S: Hardness Results on Local Multiple Alignment of Biological Sequences, *IPSJ Transactions on Bioinformatics*, **48-Sig5**, 30-38 (2007).

Akutsu T, Hayashida M, Ching W K, Ng M K: Control of Boolean Networks: Hardness Results and Algorithms for Tree Structured Networks, *Journal of Theoretical Biology*, **244**, 670-679 (2007).

Zhang S-Q, Ching W-K, Ng M K, Akutsu T: Simulation Study in Probabilistic Boolean Network Models for Genetic Regulatory Networks, *International Journal of Data Mining and Bioinformatics*, **1**, 217-240 (2007).

Kato Y, Akutsu T, Seki H: A Grammatical Approach to RNA-RNA Interaction Prediction, *Proc. 2007 International Symposium on Computational Models for Life Sciences (CMLS 2007)*, 197-206 (2007).

Tamura T, Akutsu T: An $O(1.787^n)$ -time Algorithm for Detecting a Singleton Attractor in a Boolean Network Consisting of AND/OR Nodes, *Lecture Notes in Computer Science (Proc. FCT 2007)*, **4639**, 573-583 (2007).

Jiexun W, Liang Z, Nagamochi H, Akutsu T: An Efficient Algorithm for Generating Colored Outerplanar Graphs, *Lecture Notes in Computer Science (Proc. TAMC07)*, **4484**, 573-583 (2007).

Takasu A, Fukagawa D, Akutsu T: Statistical Learning Algorithm for Tree Similarity, *Proc. 2007 IEEE International Conference on Data Mining (ICDM 2007)*, 667-672 (2007).

Hayashida M, Sun F, Aburatani S, Horimoto K, Akutsu T: Integer Programming-based Approach to Allocation of Reporter Genes for Cell Array Analysis, *Proc. International Symposium on Optimization and Systems Biology (OSB 2007)*, 21-28 (2007).

Ching W-K, Zhang S-Q, Jiao Y, Akutsu T, Wong S: Optimal Finite-horizon Control for Probabilistic Boolean Networks with Hard Constraints, *Proc. International Symposium on Optimization and Systems Biology (OSB 2007)*, 288-301 (2007).

Akutsu T, Hayashida M, Zhang S-Q, Ching W-K, Ng M K: Finding Incoming Global States in Boolean Networks, *Proc. 5th IEEE International Workshop on Genomic Signal Processing and Statistics (GENSIPS07)* (2007).

Akutsu T, Fukagawa D: Inferring a Chemical Structure from a Feature Vector Based on Frequency of Labeled Paths and Small Fragments, *Proc. 5th Asia-Pacific Bioinformatics Conference (APBC 2007)*, 165-174 (2007).

Hayashida M, Akutsu T, Nagamochi H: A Novel Clustering Method for Analysis of Biological Networks Using Maximal Components of Graphs, *Proc. 5th Asia-Pacific Bioinformatics Conference (APBC 2007)*, 257-266 (2007).

— Pathway Engineering —

Shiga M, Takigawa I, Mamitsuka H: A Spectral Clustering Approach to Optimally Combining Numerical Vectors with a Modular Network, *Proceedings of the 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2007)*, 647-656 (2007).

Shiga M, Takigawa I, Mamitsuka H: Annotating Gene Function by Combining Expression Data with a Modular Gene Network, *Bioinformatics (Proceedings of the 15th International Conference on Intelligent Systems for Molecular Biology (ISMB/ECCB 2007))*, **23**, i468-i478 (2007).

Yoneya T, Mamitsuka H: A Hidden Markov Model-based Approach for Identifying Timing Differences in Gene Expression under Different Experimental Factors, *Bioinformatics*, **23**(7), 842-849 (2007).

Zhu S, Takigawa I, Zhang S, Mamitsuka H: A Probabilistic Model for Clustering Text Documents with Multiple Fields, *Proceedings of the 29th European Conference on Information Retrieval (ECIR 2007, Lecture Notes in Computer Science)*, **4425**, 331-342 (2007).

Wan R, Moffat A: Block Merging for Off-line Compression, *Journal of the American Society for Information Science and Technology*, **58**(1), 3-14 (2007).

Kadowaki T, Wheelock C E, Adachi T, Kudo T, Okamoto S, Tanaka N, Tonomura K, Tsujimoto G, Mamitsuka H, Goto S, Kanehisa M: Identification of Endocrine Disruptor Biodegradation by Integration of Structure-activity Relationship with Pathway Analysis, *Environmental Science and Technology*, **41**(23), 7997-8003 (2007).

[Others]

Wan R, Hayes N, Goto S, Mamitsuka H: A Guided Sampling Algorithm for Identifying Network Motifs in a Transcription Regulatory Network, *In Proc. 5th Asia Pacific Bioinformatics Conference*, 64 (2007).

Wan R, Anh V N, Mamitsuka H: Passage Retrieval with Vector Space and Query-Level Aspect Models, *Proceedings of the 16th Text Retrieval Conference (TREC 2007)* (2007).

Shiga M, Takigawa I, Mamitsuka H: A New Method for Clustering Genes by Optimally Combining Expression Data with a Modular Gene Network, *The Proceedings of the 2007 Annual Conference of the Japanese Society for Bioinformatics*, P037 (2007).

Wan R, Anh V N, Mamitsuka H: Passage Retrieval from Genomic Texts: An Experience at TREC 2007, *The Proceedings of the 2007 Annual Conference of the Japanese Society for Bioinformatics*, P107 (2007).

Zhu S, Takigawa I, Mamitsuka H: FICM: A New Probabilistic Model for Clustering MEDLINE Documents, *The Proceedings of the 2007 Annual Conference of the Japanese Society for Bioinformatics*, P108 (2007).

Hancock T, Shiga M, Mamitsuka H, Coomans D: Modular Sub-graph Partitioning With Decision Trees, *The Proceedings of the 2007 Annual Conference of the Japanese Society for Bioinformatics*, P109 (2007).